

MISCELLANEOUS INVENTIONS.

A type writing machine has been patented by Mr. James W. Cole, of Spearville, Kansas. This invention covers a special construction and combination of parts, embracing many novel features, and making a machine that is operated with facility.

A wear hook for back pad billets has been patented by Mr. Orange A. Dean, of Parkville, Ill. It is intended more especially for use on the billets of the back pads of harnesses where the billets pass through the trace buckles, for preventing rapid wear of the billets, and the invention covers special details of construction.

A side spring vehicle has been patented by Mr. William J. Wayne, of Decatur, Ill. This invention covers an arrangement of cranked rods and leaf springs by which the greatest elasticity of the springs is realized without imposing undue strain on the side bars or body of the vehicle.

An opera glass has been patented by Mr. Carl Rothacker, Jr., of Pforzheim, Germany. It is adapted to be folded into the form of and carried as a watch chain trinket, having a folding or collapsible frame, instead of the usual telescopic double barreled body.

A fruit drier has been patented by Mr. Arthur Thompson, of Warner, N. H. It is provided with revolving shelves and has a suspended cylindrical deflector, whereby ascending hot air is deflected to the curved walls of a case and made to pass up through revolving tray holders containing trays of fruit.

A design for a tag holder or fastener has been patented by Mr. Walter E. Preble, of New York city. It consists in the representation of both an alphabetical and numerical figure, the figure B having a rectangularly shaped upper looped portion, while the crossing is made straight limbed to represent an X.

A knife ring has been patented by Mr. Charles H. Wickersham, of Pottstown, Pa. It has guards to retain it in place on the finger, and is made to close up compactly when not in use, furnishing an implement for the use of clerks and others who have frequent need of a knife for cutting strings on packages.

A combined torch and battle ax has been patented by Mr. Abraham Wolf, of New York city. The battle ax is made of two plates soldered to each other at their front and rear edges, having sockets to receive the staff, the upper one of which is soldered to the torch, the whole being designed for use in torch-light processions.

An extinguisher for lamps has been patented by Mr. William Millen, of New York city. It consists of a plate having clasp plates or tongues and an extinguishing plate hinged thereto, which can be used as well to make the wick more even as to suddenly smother the flame without any smoke when used as an extinguisher.

A thill coupling has been patented by Mr. Henry W. King, of Canaan, N. Y. It is made with a shaped leather strap passed through the eye of the thill iron, and secured to the projecting end of the clip yoke by a cap plate and a bolt, and has other novel features, the design being to prevent noise and promote security and convenience.

A churn cover attachment has been patented by Mr. Edmund E. Risien, of San Saba, Texas. It consists of a loose supplementary ventilating lid, designed to be slipped over the handle of the churn above the lid proper, to prevent the milk or cream from splashing out while being churned, and also to freely admit air to the interior of the churn.

A fire and water proof roofing paint has been patented by Messrs. Charles H. Phillips and Wallace M. Taylor, of Alpena, Mich. It consists of tar, hydraulic cement, sulphur, red lead, air slaked lime, mineral paint, salt, potash, plaster of Paris, and borax, in certain specified proportions, and mixed in a prescribed manner.

A baling press has been patented by Mr. John A. Hampton, of Houston, Texas. This invention covers a special construction, arrangement, and combination of parts, for improving stationary and portable baling presses, more especially designed for baling hay, the machine being easy to handle, cheap and durable, and rapid in its action.

A traction wheel has been patented by Mr. James A. Stout, of Belleville, Ill. Its rim is concave on the outer surface, and has reversely inclined consecutive ribs, disconnected at their ends, and with straight flat faces, combining lightness with strength, and reducing the tendency of the wheel to lift the earth or dirt, while giving increased pulling or tractive effect.

A machine for mincing meat has been patented by Mr. Hubert Dollman, of Birmingham, Warwick County, England. This invention covers a novel construction and arrangement of parts in a machine to which meat may be fed through a hopper, where it is cut into small pieces, then fed forward by a spiral flange and forced through perforations, and again cut before being discharged.

A bale band splicing machine has been patented by Mr. Frederick Bommarius, of New Orleans, La. It is for expeditiously and efficiently splicing metallic bands used in baling cotton, and for utilizing the scrap or surplus lengths of other baling bands after the bales they are used on have been reduced by compression, for which purpose the invention presents several novel features.

A twenty-four hour time piece has been patented by Mr. Henry C. Fick, of New York city. The first twelve hours of the day are indicated on the dial in the ordinary way, and the last twelve by figures 13 to 24 at the outer or inner side of the circle of the ordinary figures, a third hand being interposed between the two ordinary hands, adapted to be thrown out of gear or in gear with the other hands, with other novel features.

A side bar wagon has been patented by Mr. George D. Selby, of Portsmouth, Ohio. The invention consists in extending the side bars back over the rear axle, and combining with such extended portions a spring or springs, in connection with other

springs, to support the body of the vehicle and equalize the load, making a light vehicle in which springing and sagging of the side bars and couplings are avoided.

A fastening for hand bag and pocket book frames has been patented by Mr. John Mehl, Jr., of Jersey City, N. J. This invention relates to fastenings in which two balls on opposite sides of the frame snap by each other when the frame is closed, and consists in hinging or pivoting to one of the balls a bar adapted to engage the other balls and positively lock the two together, so the frame will not open when dropped, or after having been used for a while.

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 next issue.

The Pistol Rest advertised by J. A. Ross & Co. appears to be thoroughly practical, and will enable the owner of a pocket revolver to possess also a good Pocket Rifle at a very slight cost. The Rest is malleable iron, polished and varnished, and is therefore serviceable.

Whistles, Injectors, Damper Regulators; guaranteed. Special C. O. D. prices. A. G. Brooks, 261 N. 3d St., Phila.

For Sale.—One heavy Driving Wheel Quartering Machine, with all its attachments. Address Baldwin Locomotive Works, Philadelphia, Pa.

Agents with \$2 capital wanted. Brown, Elliott & Spears, Silver Creek, N. Y.

Inventor desires to correspond with manufacturers for introduction of sheet metal Tubular Steam Radiators, or will sell patents. Efficient, strong, cheap, light. John Gormly, Provo, Utah.

Cheap, cheap, cheap. Best Popular Science Works. J. Fitzgerald, 20 Lafayette Place, N. Y. Catalogue free.

Experimental Machinery Perfected, models, patterns, etc. Tolhurst Machine Works, Troy, N. Y.

Brush Electric Arc Lights and Storage Batteries. Twenty thousand Arc Lights already sold. Our largest machine gives 65 Arc Lights with 45 horse power. Our Storage Battery is the only practical one in the market. Brush Electric Co., Cleveland, O.

The Cyclone Steam Flue Cleaner on 30 days' trial to reliable parties. Crescent Mfg. Co., Cleveland, O.

For Steam and Power Pumping Machinery of Single and Duplex Pattern, embracing boiler feed, fire and low pressure pumps, independent condensing outfits, vacuum, hydraulic, artesian, and deep well pumps, air compressors. address Geo. F. Blake Mfg. Co., 44 Washington St., Boston; 97 Liberty St., N. Y. Send for Catalogue.

Mills, Engines, and Boilers for all purposes and of every description. Send for circulars. Newell Universal Mill Co., 10 Barclay Street, N. Y.

Wanted.—Patented articles or machinery to manufacture and introduce. Lexington Mfg. Co., Lexington, Ky.

"How to Keep Boilers Clean." Book sent free by James F. Holobrine, 32 John St., New York.

Stationary, Marine, Portable, and Locomotive Boilers a specialty. Lake Erie Boiler Works, Buffalo, N. Y.

Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J. For Power & Economy, Aicott's Turbine, Mt. Holly, N. J.

The Hyatt filters and methods guaranteed to render all kinds of turbid water pure and sparkling, at economical cost. The Newark Filtering Co., Newark, N. J.

Steam Boilers, Rotary Bleachers, Wrought Iron Turn Tables, Plate Iron Work. Tippet & Wood, Easton, Pa.

Send for Monthly Machinery List to the George Place Machinery Company, 121 Chambers and 103 Reade Streets, New York.

Iron Planer, Lathe, Drill, and other machine tools of modern design. New Haven Mfg. Co., New Haven, Conn.

If an invention has not been patented in the United States for more than one year, it may still be patented in Canada. Cost for Canadian patent, \$40. Various other foreign patents may also be obtained. For instructions address Munn & Co., SCIENTIFIC AMERICAN Patent agency, 361 Broadway, New York.

Guid & Garrison's Steam Pump Works, Brooklyn, N. Y. Steam Pumping Machinery of every description. Send for catalogue.

Nickel Plating.—Sole manufacturers cast nickel anodes, pure nickel salts polishing compositions, etc. Complete outfit for plating, etc. Hanson & Van Winkle, Newark, N. J., and 92 and 94 Liberty St., New York.

Supplement Catalogue.—Persons in pursuit of information on any special engineering, mechanical, or scientific subject, can have catalogue of contents of the SCIENTIFIC AMERICAN SUPPLEMENT sent to them free. The SUPPLEMENT contains lengthy articles embracing the whole range of engineering, mechanics, and physical science. Address Munn & Co. Publishers, New York.

Machinery for Light Manufacturing, on hand and built to order. E. E. Garvin & Co., 129 Center St., N. Y.

Drop Forgings. Billings & Spencer Co., Hartford, Conn.

Practical Instruction in Steam Engineering, and situations furnished. Send for pamphlets. National Institute, 70 and 72 West 33d St., N. Y.

Mineral Lands Prospected, Artesian Wells Bored, by Pa. Diamond Drill Co. Box 423, Pottsville, Pa. See p. 422.

Catalogue of Books, 128 pages, for Engineers and Electricians, sent free. E. & F. N. Spon, 35 Murray Street, N. Y.

Brass & Copper in sheets, wire & blanks. See ad. p. 438.

The Chester Steel Castings Co., office 407 Library St., Philadelphia, Pa. can prove by 20,000 Crank Shafts and 5,000 Gear Wheels, now in use, the superiority of their Castings over all others. Circular and price list free.

The Improved Hydraulic Jacks, Punches, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

Friction Clutch Pulleys. D. Frisbie & Co., Phila.

Tight and Slack Barrel Machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus. adv. p. 438.

Magic Lanterns and Stereopticons of all kinds and prices. Views illustrating every subject for public exhibitions, Sunday schools, colleges, and home entertainment. 136 page illustrated catalogue free. McAllister, Manufacturing Optician, 49 Nassau St., New York.

Stay bolt taps, true in pitch and straight. Pratt & Whitney Co., Hartford, Conn.

Catechism of the Locomotive, 625 pages, 250 engravings. Most accurate, complete, and easily understood book on the Locomotive. Price \$2.50. Send for catalogue of railroad books. The Railroad Gazette, 73 B'way, N. Y.

C. B. Rogers & Co., Norwich, Conn., Wood Working Machinery of every kind. See adv., page 438.

Shipman Steam Engines.—Small power practical engines burning kerosene. Shipman Engine Co., Boston. See page 437.

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.

Special Information requests on matters of personal rather than general interest, and requests for Prompt Answers by Letter, should be accompanied with remittance of \$1 to \$5, according to the subject, as we cannot be expected to perform such service without remuneration.

Scientific American Supplements referred to may be had at the office. Price 10 cents each. Minerals sent for examination should be distinctly marked or labeled.

(1) O. Z. writes: I am building an engine 2x3. 1. How much horse power would it give, and revolutions? A. At 350 revolutions per minute, about 1 1/2 horse power. 2. What size of boiler would I have to get? A. 15 or 16 feet long and 3 feet 4 inches beam. 3. What size of propeller would I want? A. Propeller 16 to 18 inches diameter. 4. Would boiler without tubes raise plenty of steam? A. A boiler without tubes would be too heavy. 5. What size boiler would I need? A. Boiler should have not less than 30 or 32 feet fire surface. 6. How fast would the boat travel? Engine dimensions 2x3, eccentric seven-sixteenths throw, stroke 3 inches, and a pump to force water into the boiler. A. Probably 8 miles per hour with good model.

(2) A. W. B. writes: You have several times stated in your SCIENTIFIC AMERICAN that there is nothing better for truing a grindstone than a piece of gas pipe; now, how is it to be applied to the stone—held on by main strength, or secured to the frame in such a way that it can be moved up square against the face? A. Lay a flat iron bar across the grindstone frame as close to the stone as possible without touching. Take a piece of 3/4 gas pipe 2 or 3 feet long, and hold it at about 45°, with the end resting upon the iron plate. Roll the pipe slowly across and against the face of the stone, holding the pipe firmly to its place, so that the stone will bite upon the end of the pipe. The pipe will wear away, as well as the stone; rolling it will keep the end even.

(3) H. T. C. asks how a car gets around a curve, it being farther on the outside rail than it is on the inside, the wheels being fixed on the axles. I claim one of the wheels must slip. A friend claims they do not, and explains it thus: The flanges of the wheels do not run close to the rails, there being about the space of an inch play room, and that the surface of each wheel is beveled, being the largest next to the flange, so that in rounding a curve the trucks naturally crowd to the outside, and the inside wheel runs on that part of it which is the smallest, while the outside wheel runs next to the flange, or the largest part. A. Both are correct. With conical wheels there is no slip when the curve exactly coincides with the difference of circumference due to the coning of the wheels and the difference between the gauges of rail and wheel. In all other cases there is more or less slip.

(4) J. B. asks if a cylinder should or should not be counterbored so that the packing rings' front edges run over so as to preclude the possibility of wearing the bore of cylinder to a shoulder. A. The counterbore should not be carried so far as to allow the rings to lap more than one-quarter of their width, nor less than one-eighth their width. 2. What would be the right depth of counterbore for a 16x24 engine whose packing rings travel to within 2 inches of end of cylinder when connecting rod brasses are in proper condition? A. In your engine, 3/4 to 2 1/2 inches.

(5) C. R. writes: We have an upright engine, and use a cut-off in the steam chest; when we wish to cut-off at half or quarter stroke, there is so much water formed as to cut all the piston rod packing. Will you tell us how to get rid of this water? A. Not knowing the construction of your engine or its appliances for discharging the water of condensation from steam chest or cylinder, we cannot be expected to give an intelligent answer. The smaller amount of steam passed through the cylinder at the reduced cut-off may be the cause of retention of the water of condensation. A drip pipe from the bottom of the steam chest and also at the bottom of the cylinder are necessities. The one from the steam chest should be connected with a steam trap.

(6) J. F. M. asks: 1. Has a chairman of a public meeting a right to "second a motion"? A. No. 2. Is there any appliance for receiving an uneven power from a wind engine and emitting it regular and even to the machinery for making flour or other manufactures? If so, by whom made, and where? A. The "storage of wind power," which is in reality, a regulator or equalizer of power, has been largely discussed, and many appliances proposed, in back numbers of the SCIENTIFIC AMERICAN, which we refer you to for details. We know of no special appliance on sale. 3. Is the expression "value received" necessary on a negotiable promissory note? If so, why? A. It is, to avoid a legal technicality as to its legitimacy representation of a business transaction.

(7) W. A. P. writes: Mr. Rassam, in his explorations on the Euphrates, is credited with having found a great number of tablets, giving a history of the creation, the sin of our first parents, and in fact a his-

tory of the world down to the flood. Could you tell me if these, as well as the tablets found at Babylon, have been translated into English, and if so, where the work can be procured? A. The British Museum has become the custodian of many of the tablets found in the valley of the Euphrates. The translations are very meager and uncertain. They have been the subject of contradictory discussions in the Oriental societies of Europe. The publications in regard to them are principally the narratives of the explorers, which may be obtained at your libraries and bookseller's.

(8) G. W. C. asks: How can I make some transparent varnish or enamel that will not crack or break when applied on cloth? I would like something such as on nice finished oil cloth to cover tables. A. The elastic varnishes that are used on cloth are usually made with linseed oil boiled with litharge and rubber dissolved in naphtha, mixed with various colors like paint. These ingredients are mixed and boiled to the consistency of a paste, and applied to the cloth with a scraper. The goods are then dried in an oven. The enameling of cloth is not intelligibly treated of in books, every manufacturer having his special secret in regard to the mixture. A thin varnish for finishing may be made with boiled linseed oil and rubber dissolved in naphtha, spread with a brush.

(9) J. C. W.—Roper's works are good. Presuming that you wish to become a mechanical engineer, we recommend you to become an apprentice in some engineering establishment near by, and devote your spare hours to study and draughting. Acetic acid is not injurious in proper quantities. The acid property of vinegar is mainly due to acetic acid. Vinegar made from cider contains both acetic and malic acids. You may find interesting articles on the manufacture of vinegar in SCIENTIFIC AMERICAN SUPPLEMENT, Nos. 247, 392, 396.

(10) D. S. N. writes: We are heating our office with steam, also running engine for presses with steam from the same boiler; have about 7 horse power; boiler, tubular, without steam dome; does not do so well on account of not having enough dry steam. Would there be any advantage in using an upright boiler, and which takes the most fuel to run—an upright or a tubular boiler? A. It is the opinion of most engineers that a well made and properly set horizontal tubular boiler is the most economical of all the forms. The wet steam that you complain of may come from carrying the water too high in the boiler. For the best result, it should be kept at from 2 inches to 4 inches above the tubes in small boilers. You may also gain considerable advantage by arranging your heating pipes so as to turn the exhaust steam into them when running the presses, thereby utilizing the waste steam and adding its value to the boiler for power.

MINERALS, ETC.—Specimens have been received from the following correspondents, and examined with the results stated.

C. E. K.—No. 1 is an iron ore, the hydrated ferric oxide, or limonite. No. 2 is a copper ore with traces of malachite or chrysocolla on the surface. It may carry silver. No. 3 is a clay rock, and does not appear to carry any metal. No. 4 is sphalerite, or zinc blende, consisting of zinc sulphide. It is a valuable ore of zinc. No. 5 appears to be a rock coated with thin, shiny particles of mica, and is probably of no value. No. 6 is galena or lead sulphide, and is likely to carry silver. An assay costing \$5.00 will be necessary in every instance to determine the presence and amount of the nobler metals contained in the ore.—A. M.—The specimen consists of a gneissitic rock, partially decomposed. Particles of mica that are quite shiny and gold-like in appearance are on one side. Some garnet-like crystals also appear on one of the sides. As a mineral it is worthless, and as a rock it has no economic value.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

December 16, 1884,

AND EACH BEARING THAT DATE.

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

Adjustable swinging bracket, R. Hart	309,849
Advertising device, automatic, W. Asin	309,182
Alarm. See Burglar alarm.	
Amalgamator, Hare & Higley	309,513
Auger handle, W. A. Peck	309,813
Ax or similar tool, J. H. Whiteley	309,869
Bale band splicing machine, F. Bommarius	309,375
Baling press, J. A. Hampton	309,387
Bandage machine, E. T. Tinch	309,511
Belt fastener, J. Neale	309,310
Bird cage fender, B. A. Drayton	309,338
Bit holder, H. Wilson	309,276
Boiler. See Steam boiler. Water tube boiler.	
Boiler for heating purposes, H. Burt	309,436
Boiler heating apparatus, W. N. Page	309,311
Bolting cloth, device for stretching, G. T. Smith	309,498
Bolting cloth, device for tightening, C. A. Smith	309,497
Boneblack, cleansing or revivifying, P. R. Gray	309,222
Book, W. W. Brewer	309,120
Books for binding, preventing errors in assembling signatures of, D. M. Smyth	309,318
Boot and shoe uppers for lasting, preparing, W. C. Cross	309,440
Bottle capping machine, W. Redlich	309,358
Bottle filling machine, Hafner & Geer	309,455
Bottle filling machines, sirup gauge for, H. Will	309,427
Bottle washer, C. Mussel	309,401
Box nailing machine, J. H. Foster	309,297
Bracket. See Adjustable swinging bracket. Ladder bracket.	
Brake. See Car brake. Steam brake. Vehicle brake.	
Brakeshoe, A. R. Bidwell	309,287
Brick machine, J. Tiffany	309,367
Brick, manufacture of highly refractory silica, I. Reese	309,250
Brick mould sanding machine, M. & J. Bierline	309,194
Bridge, G. W. & T. G. Blackman, Jr.	309,277
Buckets, well for sloop, Menke & Kroll	309,303
Burglar alarm, Sims & Shores	309,304
Butter chest, J. W. W. A. Brothers	309,304
Buttons, making, G. W. Prentice	309,304