

ENGINEERING INVENTIONS.

An improvement in feed water beaters has been patented by Mr. John O'D. Keleher, of Gold Dirt, Col. It consists of two series or groups of water conducting tubes arranged after a specified manner within the fire box.

An improvement in means for oiling cylinders of steam engines has been patented by Mr. John G. Donnwerth, of Browning, Mo. It is intended to obviate the waste of oil ordinarily carried off by the steam, and while being economical secures the perfect lubrication of the cylinders.

An improved stop motion for railway heads has been patented by Mr. Clark A. Tabor, of Rockville, R. I. It is intended first to stop the machine when the roving breaks; second, when the trumpet is choked by bunches on the roving; and third, in case the roving winds around either of the calendar or compact rollers.

An improved car coupling has been patented by Mr. Aaron Park, of Ottumwa, Iowa. The invention provides for a drawhead with two link apertures, one above the other, and with a U-shaped coupling pin having two downwardly projecting pins. The link raising frame is held to slide vertically in the drawhead.

An improved drawbar for cars has been patented by Mr. Halbert Rust, of Jeffersonville, Ind. It is so designed that the whole strain of the locomotive will come upon the drawbar, relieving the frame or body of the car of all pulling strain, as now experienced when the drawheads are attached to the timbers of the car in the usual way.

A railway tricycle has been patented by Mr. Henry K. Shauck, of Dayton, O. From a pair of flanged wheels, connected and suitable for use on a railroad track, is suspended a light frame projecting forward and backward, and to the forward end of a platform supported by this frame is secured a bearing for an axle of a small front wheel to run on one track.

Mr. William Fallon, of Newburg, N. Y., has patented an improvement in dumping cars. One of the objects of this invention is to convert temporarily an ordinary railroad truck into a dumping car, and the plan is such that, if desired, one-half the load may be dumped on one side of the car, and the other on the opposite side, at some other place.

A railway track cleaner for removing snow, ice, or earth packed against the inner sides of the rails, in a more simple and effective way than heretofore, has been patented by Mr. George Royal, of Davenport, Ia. It provides for a plan of hanging knives or cleaners in a special manner from the frame of the locomotive, in connection with brushes, so as to secure great strength without interference from bad joints in the rails, loose fish plates, etc.

Mr. James T. Godwin, of Norfolk, Va., has patented an improvement in dumping cars, of that class in which one or more holes are made in the car bottom for the discharge of contents, and provided with some kind of gate for closing. The object of this invention is to provide means for closing the gates so close as to hold grain, fine coal dust, etc., and yet strong enough to support coal or ore, while being easily operated from the usual position of the brakeman at the end of the car.

MECHANICAL INVENTIONS.

Mr. Thomas W. Cofer, of Portsmouth, Va., has recently patented a fly fan in which an oscillating or a rotating arm is provided with a brush or similar device which is to be rotated through the air. The blades are flexible, and are set in one and the same plane, and they are deflected according to the movement of the arm of the fan.

A new armature for dynamo electric machines has been patented by Mr. J. Edwin Giles, of Hazleton, Pa. The armature core is built up of a series of iron rings, axially in line, with oblique ribs on one or both of their lateral faces, the ribs separated by insulating material, and the object being to secure air circulation in the armature to carry off heat.

A machine for grading and cleaning coffee forms the subject of a patent which has been issued to Mr. Leon A. Gobin, of New York city. A blast of air is made to strike a sheet of falling coffee so that stones and heavy impurities will fall into one pipe, the large berries be carried into another pipe, the small ones into a third, and the broken berries, husks, and shells into a fourth.

Mr. Thomas Carney, of Arbuckle, W. Va., is the patentee of an improvement in lifting jacks, for use in the construction or repair of railroad tracks, and known as "the Carney jacks." The number of parts in the construction of the implement is small, and the arrangement of leverage such as to enable a great force to be exerted on the rail, with a small degree of manual force from the operator.

Mr. Heman Ward Stone, Jr., of Morris, Minn., has patented a gear wheel which he claims to be noiseless. It is a well known fact that in iron rolling mills where large gear wheels are used the rattling of the gear teeth produces a noise which is almost unendurable inside the mills, and an actual damage to the value of property for residence in the immediate vicinity thereof. The patentee of the improved gearing interposes an elastic cushion between the plates forming the gear wheel, which prevents the vibration and noise usual in other large gear wheels.

AGRICULTURAL INVENTIONS.

Mr. James H. Orr, of Ukiah, Cal., has recently patented an improvement in animalshears which are adapted for very rapid work, and will not injure the hands as the common shears do, nor cut or injure the animal being sheared.

A cotton planter has been patented by Mr. William M. Lindsey, of Oakwood, Texas. It has agitator reels in the seed hopper to prevent the seed from clogging in the hopper, and the dropping of the seed is regulated by gates pivoted over the bottom plate and under easy control.

A gang and sulky plow has been patented by Mr. Thomas B. Nutting, of Morristown, N. J. It is so designed that the plow can be readily raised and lowered, and adjusted to work at any desired depth in the ground, and also so that the plow will be supported while at work, so that there will be no downward pressure upon the bottom of the furrow.

A sulky harrow is also the subject of a patented improvement by Mr. Thomas B. Nutting, of Morristown, N. J. It is designed to facilitate adjustment and promote convenience in control, so the harrow can be readily raised and lowered, and supported in such position as to work at any desired depth in the ground, and the side parts of the frame can be easily raised to pass obstructions.

Mr. William P. Brown, of Zanesville, O., has patented an improvement in wheel cultivators of that class in which the two wheels run upon opposite sides of the row of plants and sustain above the same a truck or frame work having a draught attachment for the team in front and plows behind, which are attached to and drawn by the truck. The improvement consists principally in the construction, arrangement, and adjustment of the plow beams and their couplings, whereby the plows next to the row of plants may be set in a higher horizontal plane, to adapt them to the elevation of the row or ridge upon which the plants are growing.

MISCELLANEOUS INVENTIONS.

Mr. Robert Holbon, of Alpena, Mich., has patented an improvement in wipers for the commutators of dynamo electric machines. It is so located as to be revolved in connection with the armature shaft, and keep the surface of the commutator clean and bright, so that there will be a perfect contact with the brushes.

A fish net, or netting, made of metal instead of thread or twine, has been patented by Mr. William H. Boyd, of Louisiana, Mo. Copper or other wire is used, of moderate flexibility, bent in zigzag manner to make loops, each loop having one rounded closed end, and being twisted at its opposite end round the closed end of a loop in a succeeding row.

Mr. John J. Dillard, of Eureka Springs, Ark., has patented an improved medicated soap, specially intended for use in skin diseases, besides being an agreeable toilet article. It is compounded of Eureka Springs (Ark.) water, or its chemical equivalent, sulphur, glycerine, borax, chrysanthanic acid, tincture arnica, coconut oil, and concentrated lye.

Mr. J. A. Campbell, of Waco, Texas, has patented an improved oil can, in which the nozzle remains closed, except when the bottom of the can is pressed, thereby preventing useless waste of oil. This also prevents the oil outlet from being stopped up, and enables the operator to see how much oil is given to each hole, and to facilitate the removal of dirt and grease from the oil holes before oiling.

A simple and effective dust ring for watches has recently been patented by Mr. S. M. Morgan, of Kingsland, England. The ring, which is of peculiar form, is fitted in the case before the movement and secured by screws, after which the movement is fitted to the ring. The ring does not afterward require to be removed, the movement alone being taken out for cleaning, leaving the ring permanently fixed in the case.

An evaporator for making sugar from juices has been patented by Mr. Orlando B. Jennings, of Honey Creek, Wis. It consists of an upright externally evaporating cylinder, with a series of outer distributing cups, so that evaporation will take place as the liquid runs in thin film over the outside of the cylinder, these cups being arranged so as to be readily attached or removed. The evaporation may be open or by boiling *in vacuo*.

An improved bag fastener has been patented by Mr. Charles W. Bradford, of Belfast, Me. It consists of a circularly curved spring pivoted at one end between cross pieces, and at the other end having a suitably arranged locking lever; a hook and chain attached to the cross pieces then facilitates the easy fastening and firm holding of the bag. This fastener can be readily adjusted for bags of three sizes or thicknesses.

Mr. William Cleather Gordon, of the Langham Hotel, London, England, has patented in this country an improved electric fire alarm apparatus, principally for hotels and other large structures. There are one or more indicators on each floor, each having as many signaling apertures and corresponding signal disks, so that an alarm of fire originated on any floor or locality on any floor may be sounded simultaneously wherever desired, and convey precise information of its whereabouts.

An apparatus for raising sunken vessels has been patented by Mr. Henry Schuyler, of Sturgeon Bay, Wis. It provides that, from a float at some distance from the sunken vessel, two chains be carried by tugs completely around and at some space therefrom: that these chains be then connected by a third short one with rings on each end, through which the other chains are passed, after which the loop so formed around the sunken vessel may be drawn in close under her keel, and the vessel lifted in the usual way by hoisting machinery on scows.

Mr. A. K. Schaap, of Richmond, Va., has recently secured a patent for an improved mask for protecting the faces of baseball catchers. The ordinary mask gives the protection required, but in case of what is technically known as a "tip foul" ball, which requires the catcher to look upward, the net work of wires obstructs the vision and interferes with the catching of the ball. This invention overcomes these objections by forming the cushioned frame and the net work of wires in two distinct parts, which are hinged together at one side and provided with a spring catch for holding the net work in closed position, and a spring for forcing the same open when the catch is released. By simply pressing a button attached to the catch, the net work will open to one side automatically without necessitating any change of the position of the head or direction of the eye.

Insurance.

The Connecticut Fire Insurance Company, of Hartford, has total assets of \$1,781,626, of which the policyholders' surplus is \$1,292,316, being its cash capital of \$1,000,000, and its net surplus of \$292,316. The company is officered by experienced and careful men, and is amply able, as above shown, to respond to all its contracts. A good thing for burns is a policy in this institution when the fire comes.

The New England Mutual Life Insurance Company, of Boston, is the oldest and largest life insurance company holding a Massachusetts charter, and is in most prosperous condition, as its statement of assets and liabilities proves. The New England Mutual is not a monopolist, and avoids all extravagance in seeking business, and its publications are kept strictly free from depreciatory comments on its competition of every sort; but the company has ample accommodations for doing an increased business with a resulting advantage in economy to all its members, and, as under the new "Life Rate" endowment feature it offers a positive guarantee of such economy in the lowness of the premiums, considering the extra advantage which the policies secure, it certainly deserves the large increase of its patronage incident to the adoption of the feature which it anticipates and is already receiving.

Statistics show that of accepted lives by the insurance companies one out of every five reaches the age of 75.

The Mutual Life Insurance Company, of New York, are erecting the finest insurance building in the country, and hope to take possession on the first of next May.

The United States Mutual Accident Association, of New York, has over \$70,000,000 accident insurance in force, with weekly indemnity of over \$18,000,000 per annum.

The life insurance companies of the United States carry insurance upon over one million lives, amounting to upward of one and a half billion dollars.

A Paris company has been formed to insure against losses resulting from delays in the delivery of merchandise.

Financial.

Brown Brothers & Co., 59 Wall Street, New York, issue commercial and travelers' credits available in all parts of the world.

Preston, Kean & Co., of Chicago, Ill., make a specialty of investment securities.

The exchanges at the New York Clearing House for the year ending June 30, 1883, amounted to \$40,293,155,259.65, and the balances to \$1,568,983,196.05.

The total amount of resources of all the national banks, according to the reports made the Comptroller of the Currency October 2, 1883, were \$2,372,655,364, against \$2,339,833,676 in 1882, and \$2,358,387,391 in 1881. The number of national banks in operation was 2,501 in 1883, 2,269 in 1882, and 2,132 in 1881.

The total amount of currency of all kinds in existence in this country on October 1, 1883, was, according to official reports, \$1,730,597,823.

Chief Justice Beasley, at Trenton, N. J., recently decided that buying stocks on margin was virtually gambling and therefore illegal; but if the stocks were bought, a deposit made, and title passed, then, without giving possession of them, it was legal.

Manufacturing Notes.

Across the street from the office of the SCIENTIFIC AMERICAN is the extensive clothing warehouse of Devlin & Co. They have recently enlarged and improved the front of their building. The panes of glass used in the new windows exceed in size those of any other building in the city.

It is proposed to form a stock company with a capital of \$50,000 for the manufacture of woolen goods in Union, N. H.

The Bramble Lock Works, Terre Haute, Ind., are being rapidly got into shape. The machinery will soon be placed in position.

The works of the Knickerbocker Manufacturing Company, who will manufacture milling machinery, are rapidly going up at Jackson, Mich.

The Saucon Blast Furnaces, now idle at Hellerstown, Pa., will probably be sold to a company that will build a rolling mill to run in connection with the furnaces.

The Eagle Iron Works, of Terre Haute, Ind., have the machinery completed and ready to be placed in position. It is understood the mill will be ready for operation by November 26.

The Duryea Starch Factory, at present located on Long Island, N. Y., is to be removed to some point in the West, and the people of Quincy, Ill., are making an effort to secure its location. Several hundred men are employed.

Mr. Otto, inventor of the Otto gas engine, has recently obtained perpetual injunctions against three English firms, restraining them from infringing his patent, and in a fourth case has obtained judgment for an injunction.

The special illustrated catalogue of heavy woodworking machinery, just issued by J. A. Fay & Co., Cincinnati, O., gives the most information of any of its kind that has come to our notice. The engravings are clearly defined illustrations of the machines, and the letterpress plainly descriptive. Several new machines are represented.

Hewes & Phillips' Iron Works are getting out a new pattern Corliss engine, which they will build in sizes from 35 to 1,000 horse power.

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.

For Sale.—U. S. Patent No. 277,399. Address Geo. Worthington, South and German Streets, Baltimore, Md.

A nice, easy business secured in every town. Send 10 cents for terms. etc. Box 1457, Providence, R. I.

Best Popular Science Works, 15 cents each. Catalogue free. J. Fitzgerald, 20 Lafayette Place, New York.

Dies, Patterns, etc., Chas. A. Bailey, Middletown, Ct.

Drawing Instruments, Drawing Paper, and Drawing Materials. The largest stock in the United States. Send for catalogue. Queen & Co., Philadelphia.

Steam Pipe and Boiler Covering, Roofing Paints, Prepared Roofing, and general line of Asbestos materials. Phil Carey & Co., 127 Central Avenue, Cincinnati, O.

For Sale.—Five patents entire, Nos. 235,844, 244,414, 254,251, 247,286, 238,545. Paper Pulp Engine. Pay as speciality. J. R. Abbe, Manchester, N. H.

For Freight and Passenger Elevators send to L. S. Graves & Son, Rochester, N. Y.

Brush Electric Arc Lights and Storage Batteries. Twenty thousand Arc Lights already sold. Our largest machine gives 80 Arc Lights with 45 horse power. Our Storage Battery is the only practical one in the market. Brush Electric Co., Cleveland, O.

Best Squaring Shears, Tinners', and Cannery Tools at Niagara Stamping and Tool Company, Buffalo, N. Y.

Lathes 14 in. swing, with and without back gears and screw. J. Birkenhead, Mansfield, Mass.

The Best.—The Duerber Watch Case.

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, 261 Broadway, New York.

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

Blake's Patent Belt Studs are the strongest, cheapest, and most durable fasteners for belts. Greene, Tweed & Co., New York.

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.

Lists 29, 30 & 31, describing 4,000 new and 24-hand Machines, ready for distribution. State just what machines wanted. Forsaith & Co., Manchester, N. H., & N. Y. city. For Power & Economy, Alcott's Turbine, Mt. Holly, N. J.

"Abbe" Bolt Forging Machines and "Palmer" Power Hammers a specialty. Forsaith & Co., Manchester, N. H.

Railway and Machine Shop Equipment.

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

"How to Keep Boilers Clean." Book sent free by James F. Hotchkiss, 84 John St., New York.

Aneroid Barometers, Mercarial Barometers, Thermometers, Anemometers, Hygrometers, Hygrometers. Send for catalogue. Queen & Co., Philadelphia.

Wanted.—Patented articles or machinery to make and introduce. Gaynor & Fitzgerald, New Haven, Conn.

Water purified for all purposes, from household supplies to those of largest cities, by the improved filters manufactured by the Newark Filtering Co., 177 Commerce St., Newark, N. J.

Improved Skinner Portable Engines. Erie, Pa.

Latest Improved Diamond Drills. Send for circular to M. C. Bullock Mfg. Co., 80 to 88 Market St., Chicago, Ill.

Ice Making Machines and Machines for Cooling Breweries, etc. Pictet Artificial Ice Co. (Limited), 142 Greenwich Street. P. O. Box 3083, New York city.

Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J.

Machinery for Light Manufacturing, on hand and built to order. E. E. Garvin & Co., 139 Center St., N. Y.

Split Pulleys at low prices, and of same strength and appearance as Whole Pulleys. Yocom & Son's Shafting Works, Drinker St., Philadelphia, Pa.

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.

Fossil Meal Composition, the leading non-conducting covering for boilers, pipes, etc. See adv., p. 333.

Curtis' Expansion Trap See illustration on p. 118.

C. B. Rogers & Co., Norwich, Conn., Wood Working Machinery of every kind. See adv., page 285.

Lightning Screw Plates, Labor-saving Tools, p. 284.

Woodwork'g Mach'y, Rollstone Mach. Co. Adv., p. 302.

Steam Pumps. See adv. Smith, Vaile & Co., p. 301.

Philosophical and Chemical Apparatus and Materials. Send for catalogue. Queen & Co., Philadelphia.

American Fruit Drier. Free Pamphlet. See adv., p. 318.

Brass & Copper in sheets, wire & blanks. See adv., p. 317.

The Chester Steel Castings Co., office 407 Liberty St., Philadelphia, Pa., can prove by 20,000 Crank Shafts and 15,000 Gear Wheels, now in use, the superiority of their Castings over all others. Circular and price list free.

Machine Diamonds, J. Dickinson, 64 Nassau St., N. Y.

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

Hoisting Engines. D. Frisbie & Co., Philadelphia, Pa.

Tight and Slack Barrel Machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus. adv. p. 315.

Walrus Leather, Nickel Anodes, Salts, and all Platers' Supplies, Greene, Tweed & Co., New York.

Our goods rank first for quality, safety, and durability. Please compare them with any other make, and is not found better and cheaper, quality considered, we will bear the expenses of the trial. Lehigh Valley Emery Wheel Co., Lehigh, Pa.

Special Students in Technical Chemistry, Analysis, and Assaying. Apply to Prof. Leeds, laboratory of the Stevens Institute of Technology, Hoboken, N. J.

Pays well on small investment.—Stereopticons, Magic Lanterns, and Views illustrating every subject for public exhibitions. Lanterns for colleges, Sunday-schools, and home amusement. 116 page illustrated catalogue free. McAllister, Manufacturing Optician, 49 Nassau St., N. Y.

Fine Taps and Dies in Cases for Jewelers, Dentists, Amateurs. The Pratt & Whitney Co., Hartford, Conn.

The "Rockwood" Instantaneous Photographic Dry Plates are the best for amateurs and scientists. Send for circular and instructions, No. 17 Union Square.

Catalogues free.—Scientific Books, 100 pages; Electrical Books, 14 pages. E. & F. N. Spon, 35 Murray St., N. Y.

Straight Line Engine Co., Syracuse, N. Y. Best in design, materials, workmanship, governing; no packing.