

RECENTLY PATENTED INVENTIONS.
Engineering.

VAPORIZER AND BURNER.—Frank B. Meyers, New York City. This invention is designed to provide a burner specially designed for boilers and like apparatus, to permit of using oil and steam as fuel in a simple and effective manner, and in which the oil supply pipe is located in a nozzle within which outer concentric steam channels discharge.

POWER APPARATUS.—Patrick J. Dalton, New York City. This apparatus consists in general of a main reservoir supplied under a "head" by a flume or conduit, the outlet or exhaust surrounding the reservoir and bracing it, while supporting a series of wheels, preferably turbines supplied from the main tank and discharging into the exhaust chamber, the construction being simple, but designed to afford great power.

DEVICE FOR PROPELLING VESSELS.—Jacob Cochrane, Hill City, South Dakota. A series of buckets, according to this invention, is used in connection with endless chains and wheels, which automatically reverse as the engine is reversed, the buckets having a feathering action, and being readily detachable, so that their number may be lessened as desired.

Railway Appliances.

CAR COUPLING.—Warren Portlock, San Diego, Cal. In this coupler the drawheads are both vertically and horizontally bifurcated, so that the cars may be readily coupled from either end, the device operating automatically and being more especially adapted for application to box or freight cars, although applied to passenger cars without change in their construction.

INDICATOR FOR RAILWAY CARS.—John R. Fletcher, Baltimore, Md. This is a street or station indicator to be applied to horse, steam or electric cars, the indicator casing being arranged high up in one corner of the car, in connection with an annunciator connected to a button or ring on the outside of the car, which when pulled announces the street or station, the indicator wheel being operated from a connection with the car axle, and arranged in correspondence with the distance between stations.

Electrical.

TROLLEY FOR ELECTRIC STREET CARS.—Franklin C. Wheeler, St. Joseph, Mo. This invention provides a trolley in which the jumping of the electric conductor from the trolley is avoided, and which also furnishes means for readily reversing the trolley when it is desired to run the car in the opposite direction.

TELEGRAPH KEY.—John B. Van Deusen, Saratoga, N. Y. This invention provides means for automatically closing a telegraph circuit as the operator releases the key, and for opening the circuit when the key is grasped by the hand, there being combined with anvil contact and key lever a contact spring automatically closing the circuit on the key lever, and an auxiliary lever pivoted to the key lever for pressing the contact spring away therefrom.

Agricultural.

HAY LOADER.—Albert J. and William J. Hughes, Lisbon, North Dakota. This elevator has a receiving chamber, to the main frame of which is connected an elevator board, with endless belts provided with projecting teeth or tongs arranged in triangular shape along the rake and up the elevator board, to deliver the hay on the load in the most compact shape, for more easily stowing it in its proper place, and prevent its being scattered by the wind.

Mechanical.

PLACING BELTS ON PULLEYS.—Henry A. Schenerle, Philadelphia, Pa. The device provided by the inventor to facilitate such jobs consists of two opposed disks united by a spindle section, a shank projecting from one disk and an arm extending from the shank, whereby the belt may be elevated and placed over the pulley, or in partial contact with it, when the device is turned and lowered until one disk is located at each side of the pulley and the spindle section holds the belt in contact with its periphery.

RIVETING MACHINE.—Reinhold A. Carl, Hearne, Texas. This is a machine by which metal rivets may be rapidly driven through any desired material and the rivets be headed at the same operation, the machine being particularly intended for light sheet metal and other light materials, and the invention covering various novel features and combinations of parts.

WRENCH.—Friedrich W. Kasch, Austin, Texas. This invention is designed to provide a tool especially adapted for a pipe wrench, but also capable of use as a monkey wrench, it having practically also two handles, one of which may be used as a lever to disengage the jaws from the pipe, and adjust the upper jaw to and from the lower jaw.

WRENCH.—George W. Hooks, of Hooks' Switch, Texas. This tool has a rigid jaw on the outer end of its shank, and a movable jaw adjustable on the shank, an eccentrically headed lever bearing on the shank and pivoted to the rear end of the movable jaw, to move the latter, making a combined pipe and nut wrench, and one which can be quickly changed from one to the other.

CALIPERS AND DIVIDERS.—Anders P. Laursen, Passaic, N. J. This invention is designed to provide a rapid, simple and convenient adjustment, while dispensing with any protuberances upon the sides of the legs, whereby the devices may be most effectively employed as inside calipers or dividers, the device being manufactured at a minimum cost and designed to be very variable.

OIL CUP.—Charles L. Burbeck, Fort Bragg, Cal. This cup has a valve with an upwardly extending stem carrying a collar in connection with which is arranged a spring, a cam being mounted beneath the collar, with means for turning it, thus providing for the intermittent delivery of oil to a journal bearing, and also for regulating the amount of oil so delivered.

SHAFT HANGER.—John W. Fisher and Watson A. Kinney, Bridgetown, Nova Scotia, Canada. This invention relates to a combined shaft hanger and an idler or dead pulley support, providing a hanger which will equalize the lateral strain of the shaft and the weight of the pulley and make an essentially universally balanced bearing for the shaft.

COTTON SEED LINTER.—Edward J. O'Brien, Texarkana, Texas. This invention covers an improvement on a former patented invention of the same inventor, designed to prevent the accumulation of lint within the lint chambers, the automatic discharge of lint from the saw teeth, thorough agitation of the seed within the receiving chambers, and the delivery of the stripped seed from the machine.

Miscellaneous.

DIPPER.—Martin L. Schoch, New Berlin, Pa. This is a dipper having a set of scrapers arranged within it, and fitting against its bottom and sides, with means for actuating the scrapers, whereby when the dipper has been emptied of thick or sticky substances, it will be self-cleaning, the adhering portions being scraped from its inside.

TYPE WRITING MACHINE.—William P. Querrel, Kansas City, Mo. Combined with the type carrier and a vertically rocking key board geared thereto are a carriage and hammer, both actuated by depressing the key board, the depression of a particular key serving to stop the movement of the carrier, with other novel features, designed to constitute an inexpensive and durable machine.

BOOK AND INDEX.—Richard R. Vernon, Woodbridge, N. J. This is a device designed to allow of folding the index into the book, and permit of using the book or index each independently of and without disturbing the other, enabling the user to bring the index into a convenient position for inspection or for writing in the names, titles, and page numbers of letters, accounts, etc.

SHOW CASE.—Robert E. Sherlock and Manfred Freeman, Grenfell, Northwest Territories, Canada. This is a simple and convenient case, designed to occupy but little floor room, display conveniently a great variety of goods, and effectually protecting them from dirt and dust, while the case may be adjusted to hold large or small articles.

ADVERTISING DEVICE.—John B. Williamson, Louisville, Ky. This is a portable device, in the form of a cylinder, from which a tape or scroll may be drawn outward and automatically returned when released, upon which scroll or tape any advertising matter or information may be printed.

COIL CLASP.—Calvin Jackson, Jacksonwald, Pa. This clasp consists of two individual parallel oppositely wound coils adapted to be pressed laterally together, and a removable connector to be passed through and removed from the space formed by the overlapping portions of the coils when they are pressed together.

BICYCLE HEAD.—Henry G. Barr, Westborough, Mass. This invention provides for the steering heads compensation for contraction and expansion due to atmospheric changes, thereby avoiding objectionable rattling or binding, the invention being applicable to all kinds of bicycles, having either ball or cone heads.

SHAFT HOLDER FOR VEHICLES.—Augustus H. Davis and Orval E. Byrd, Crawfordsville, Ind. A case or portion is adapted for connection with the shaft, and provided with an endless or continuous groove, a bar having a stud or portion to traverse the groove, while there are means for connecting the bar with the axle, the device holding up the shafts when not in use, and for convenience in hitching the horse thereto.

SHUTTER WORKER.—Abraham Pugeley, Jamestown, R. I. This invention provides a simple and efficient device by which the blind may be operated from the inside of the building, and also for fastening the blind in any desired position, the invention covering various novel features of construction and combinations of parts.

FOLDING CHAIR AND STEP LADDER.—Charles L. Knoeller, New York City. This is a piece of furniture more especially designed for use as a hall or library chair, although it may be used to advantage in other rooms or places where a step ladder is required, being very substantial when set up for either use, and being readily folded into small space for transportation or storage.

PEN HOLDER.—Joshua C. Palmer, Lanham, Texas. This is a holder designed to be easily held between the fingers without cramping them, and support the pen well in sight of the writer, being a curved flat holder with a projecting shank for the pen, the shank being nearly parallel with the straight portion of the holder, and in line with the eye when held in position for writing.

TRACE CARRIER.—Andrew Hartman, Chicago, Ill. This invention covers an improvement applicable to all kinds of harness, team traces included, and which is designed, when applied to a trace, to effectually prevent it from being chafed, as no portion of the harness usually connected to the trace is brought in contact with it.

HANDLE FOR TABLE CUTLERY.—William T. Decker, Rockport, Pa. This is a handle for spoons, forks, and other table or culinary and other articles, and is provided with a hinged guard or hook applied to the under side of the handle, in advance of the back or outer end of it, and adapted to close in front up against the handle.

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—New and second hand iron-working machinery. Prompt delivery. W. P. Davis, Rochester, N. Y. Acme engine, 1 to 5 H. P. See adv. next issue.

Friction Clutch Pulleys. The D. Frisbie Co., N. Y. city. Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J. Send to H. W. Knight & Son, Seneca Falls, N. Y., for catalogue of Metallic Pattern Letters and Figures.

Best Ice and Refrigerating Machines made by David Boyle, Chicago, Ill. 155 machines in satisfactory use. The Improved Hydraulic Jacks, Punches, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

Power presses and dies. Also contractors for special machinery. T. R. & W. J. Baxendale, Rochester, N. Y. Tight and Slack Barrel Machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus. adv., p. 13. Screw machines, milling machines, and drill presses. The Garvin Mach. Co., Laight and Canal Sts., New York.

Veneer machines, with latest improvements. Farrell Dry. and Mach. Co., Ansonia, Conn. Send for circular. Billings' Patent Adjustable Tap and Reamer Wrenches. Bronze Forgings. Billings & Spencer Co., Hartford, Conn.

Pattern makers wanted in wood shop and in our metal room. State experience and pay wanted. Illinois Malleable Iron Co., Chicago, Ill.

The Holly Manufacturing Co., of Lockport, N. Y., will send a book of official reports of duty trials of their high duty pumping engines on application.

Guild & Garrison, Brooklyn, N. Y., manufacture steam pumps, vacuum pumps, vacuum apparatus, air pumps, acid blowers, filter press pumps, etc.

Linens and rubber hose, all kinds of belting, general mill and factory supplies. Send for catalogue and prices. Greene, Tweed & Co., 83 Chambers St., 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.

For Sale—Patent No. 415,442, Nov. 19, 1889. Canadian No. 33,447, Jan. 21, 1890. In successful operation. Costs \$2, sells at \$5. Price—American, \$10,000; Canada, \$5,000. Address P. H. Brown, Vesuvius Bay, Salt Spring Island, British Columbia.

A business man, who has traveled extensively, desires a manufacturers' agency, or to assist in introducing some meritorious invention, goods, or machinery of a nature that will be universally salable. References. Address W. Y., Grove Hall, New Haven, Conn.

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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 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.

(2381) R. W. asks: I am making an electric motor according to directions contained in SUPPLEMENT, No. 641, and would like to know what it is that makes the armature revolve when the current is turned on. Does the field magnet repel the wire placed at right angles to it? A. The field magnet poles attract and repel the poles of the armature. The location of these is determined by the winding of the magnet and armature. 2. Why can't a person use a brass armature ring, or does it have to become magnetic in order to operate? A. Because it will not become polarized, i. e., magnetic. 3. Could it be geared to a common sized skiff, and be run with 8 one quart batteries or 2 four quart? A. Your battery would be far too small. 4. I have read where it says that high power in a motor can only be developed by a strong magnetic field. Suppose the armature were connected with 4 quart batteries and the field magnet with another 4, would it be stronger? A. In general terms, the stronger the battery, the stronger would the motor be. 5. Why does Stanley not come to America? Did he not get his start from Gordon Bennett, and has he not spent most of his life here, not counting that spent in Africa? A. In his last African trip he represented England, not America. For his life, etc., we refer you to our SUPPLEMENT, Nos. 505, 581, and 754.

(2382) R. McK. asks: In speaking of a single car in a vestibuled train, should it be called a vestibule or vestibuled car? Also should a solid train of cars be called a vestibule or vestibuled train, both ends of the cars having vestibules? A. We prefer the word "vestibule" to "vestibuled" in all above cases.

(2383) A. W. writes: 1. I have a paper balloon and wish to blow it up with common air to prevent the sides from sticking, so I can varnish it. What can I find to blow it up with, and what is best? A. Blow up your balloon with a bellows. It may first be partially inflated by holding its mouth against the wind or by running with it, holding its mouth forward. 2. Where can flaxen or linen netting be found, such as is used for small balloons? A. Address a dealer in sporting goods and fishermen's supplies. 3. Is there any danger in boiling linseed oil, a small quantity at a time,

in a pot containing a pint or so? A. Yes. See our SUPPLEMENT, No. 726.

(2384) A. N. D. wishes to know how to clean photographic negatives so that the glass may be used for other purposes. A. To eight ounces of water add 10 minims of hydrofluoric acid; pour the mixed solution in a rubber tray, immerse in the solution one negative at a time. In about a minute the film will loosen at the edges, and with a flat wood stick may be rolled up off the plate and removed bodily. Negative after negative may be thus easily cleaned. Keep the fingers from touching the solution as much as possible. Another method is to soak the plates in a hot dilute soda solution, which will dissolve out the film.

(2385) S. A. A. asks: 1. How can I make a small emery wheel, say 3 or 4 inches diameter? A. Turn out a wooden wheel, put thin glue on its periphery and roll in emery. 2. What is the best acid to etch on zinc plates with? A. Sulphuric acid is the cheapest and gives good results.

(2386) J. W. B. asks (1) the kind of glue size used on paper before applying the oil, resin and molasses for "sticky fly paper." A. None is required. 2. How to prepare the white and colored inks for show card writing? A. Mix the desired pigments, Chinese white, etc., with thick gum arabic water. Apply with a funnel or through a spout.

(2387) L. B. asks for a desirable dressing for the hair of an elderly person who has remarkably pure white hair, but is troubled by the ends of hair splitting and also breaking off. A. We should not advise any dressing. An occasional clipping of the extreme ends by a good hair dresser is the treatment that seems most advisable.

(2388) W. W. W. asks: 1. In making a dry pile, is there anything that I could use instead of peroxide of manganese. I have been unable to get it. A. We know of nothing that will answer so well. You can get it of any dealer in chemicals in this city. 2. How can I construct a dry battery for use with a telephone? A. Dr. Gassner's dry battery is described in the SCIENTIFIC AMERICAN, vol. 61, page 306. Also in Experimental Science.

(2389) B. E. P. writes: Quite a while ago I noticed in this department a method for easily and readily splitting newspaper. Can you refer me to the issue giving such receipt, or can you name a ready method? Could not the paper be swelled with some chemical to enable it to be split perfectly? A. This has been published in Notes and Queries. Some dexterity, or rather judgment, is required in executing it. The paper to be split is pasted between two sheets of compact strong paper. The best flour paste should be used. Mucilage is unreliable. When nearly dry, if the two outer pieces of paper are pulled apart, the central one will split, and one-half of the central piece will adhere to each. By soaking in water they can be removed. Some paper works better than others. If the outer paper is of a loose texture, it may split instead of the desired one.

(2390) T. C. B. asks: Can a rain gauge be strictly accurate and yet have a funnel-shaped mouth? I thought the sides should be perfectly perpendicular. A. A funnel-shaped mouth involves a little inaccuracy, but it compensates for this by magnifying the reading divisions.

(2391) J. W. S. asks: What is the longest piece of carpet, 3 feet wide, that can be placed diagonally on the floor of a rectangular room 10 x 20 feet, and cutting ends of carpet square. A. 19 3/4 feet, approximately.

(2392) E. D. S. asks: Can you give me the formula for the composition for moulds, used in rubber stamp making (dry heat process)? A. Plaster of Paris can be used, or a metallic mould made of zinc, of type metal, or of fusible alloy. Use talc powder to prevent the India rubber adhering to the mould.

(2393) C. A. B. asks: 1. Is there any other practical way of duplicating written matter besides the "copying pad" and the "cyclostyle"? A. Several other methods have been devised; some are photographic, others involve the use of a steel stylus for writing, with a file-cut steel surface for the paper to rest on. This gives a stencil. It has been proposed to rest the paper on a carbon surface and cause sparks from an induction coil to pass from stylus to carbon, thus producing a stencil. Lithographic apparatus is also on sale by stationers. 2. Can you give a recipe to make a good blackboard fluid? A. 4 parts 95 per cent alcohol, 8 ounces shellac, 12 drachms lamp black, 20 drachms ultramarine blue, 4 ounces rottenstone in powder, 6 ounces powdered pumice stone. Many other formulas are given similar to this.

(2394) C. P. G. writes: I want to make some rubber castings in plaster of Paris moulds, and would like to know of some way (if there is any simple way) in which to treat the rubber so that it will become very firm in the mould without pressure. The rubber that I want to use is that of which car springs are made, and I would like to have it as firm as it is now. A. Use rubber mixed with sulphur, but unvulcanized. Some pressure is required to force it into the crevices of the mould. Then by heating it will become vulcanized. What is sold as pure gum rubber can be treated as above with some success. We refer you to our SUPPLEMENT, Nos. 249, 251, 252, for a valuable paper on India rubber. Possibly the rubber you wish to use is too hard. If so, nothing can be done with it.

(2395) B. E. P. asks: Can you give a description of method and process employed by you in the production of the printed copies of the specifications and drawings of patents, which you furnish for 25 cents? A. The patent copies are printed by the government. The drawings are printed by the lithographic process, the type matter in the usual way.

(2396) J. N. H. asks: 1. Is there any way by which the gold can be recovered from the toning solution used in toning photographs? A. Add solution of ferrous sulphate (copperas). The gold will be precipitated as a metallic powder. 2. If an article is bought for nothing and sold for five dollars, what is the percentage of gain? A. The ratio of gain is infinite; it is not expressible by percentage.