

ENGINEERING INVENTIONS.

A grip for electric cars has been patented by Mr. John C. Henderson, of New York city. In an electric motor drive-car, with a hole in its bottom, is carried a vertical rod with rollers at the lower end, to act as an adjustable clamp on a rail or bar arranged in an underground longitudinally-slotted tube.

A car coupling has been patented by Mr. Edward F. Pendexter, of Milford, Mass. The invention covers a lever held at its inner end on a draw head, and having two prongs, one of which, at the outer end, has a lug on the bottom surface, so the lugs of two opposite prongs engage with each other, and thereby couple the cars. The outer ends of the levers pass through frames projecting from the ends of the cars, keeping the levers in proper position, and guiding them while uncoupling the cars.

MECHANICAL INVENTIONS.

An improved vise has been patented by Mr. Henry A. Hyle, of Redwood, N. Y. The jaws are recessed, and in the recesses are cylinders, adapted to be turned in the jaws, these cylinders having recesses or cavities of various shapes, both longitudinal and transverse, for holding objects in horizontal and vertical positions, these cylinders being set according to the shape of the object to be held.

A saw-mill dog has been patented by Mr. William H. Snyder, of Waynesborough, Penn. It is arranged in a sliding head, adjusted by a pinion or toothed segment over a vertical rack bar, affixed to the side of the knee of the log of the carriage, and with a sliding head, pinion, and rack bar is a lever with a loose play about the axis of the pinion, with peculiar bearings, etc.

An improved reamer has been patented by Mr. Charles H. Malmédie, of New Bedford, Mass. The invention combines in one device a reamer of fixed diameter, an expanding or adjustable reamer, and a gauge of standard size for determining the diameter of the reamed hole, so great accuracy is obtained, the durability of the tool is increased, and work is done with greater facility.

A felly-boring and spoke-tenoning machine has been patented by Mr. Edwin M. Jenkins, of Browning, Mo. A rotary hollow mandrel, adapted to carry a tenoning head, is combined with a hollow cutter and boring socket, with a shaft arranged to slide in the socket and mandrel, and be screw-clamped thereto, having a key seat along its whole length, and provided with a stop, there being also a chuck and felly clamp, and table arranged to shift up and down to determine the relation of the chuck and clamp to the tool socket.

AGRICULTURAL INVENTIONS.

A corn planter has been patented by Messrs. William Hopper and Isaiah J. Allen, of Jefferson, Iowa. This is an improved mechanism for operating the dropping apparatus, markers or pointers, denters, and driving guides, designed to provide more simple and efficient machines than such as are now in use.

A grain drill has been patented by Messrs. Moses F. and Thomas A. Foley, of Waveland, Ind. This invention is to adapt grain drills for use in drilling wheat between rows of corn, and the plow beams are made with holes to receive the lower ends of the seed-conducting tubes, the tubes, standards, and beams being conveniently connected.

A plow attachment forms the subject of a patent granted to Mr. John O. Caldwell, of Goshen, Ga. It is in the nature of a detachable mould board for the turning shovels of a light plow, to prevent the collection of earth, vines, weeds, etc., on their upper portions, the attachment being fixed by two bolts, so as to be quickly applied or removed.

A cotton scraper and cultivator has been patented by Mr. Seth H. Fountain, of Amite City, La. In a cultivator are two front scrapers, beveled and with an open space between them, and two shovels in the rear of each scraper, the scrapers being vertically adjustable and the plows laterally adjustable, and the whole being suitably jointed together, to promote the vigorous growth of small plants.

MISCELLANEOUS INVENTIONS.

A rein guard has been patented by Mr. Charles W. Speaks, of Canal Winchester, Ohio. It is a device for holding the reins raised, so the horse cannot throw its tail over them, and consists of a wire frame bent and twisted to form standards, with rein rest and braces.

A chain for draperies has been patented by Mr. Christian A. Schmidt, of Hoboken, N. J. The invention consists of a chain on which tufts or balls of fibrous materials are fixed at suitable intervals, the tufts being held on or between the links as may be desired.

A pistol game apparatus has been patented by Mr. John R. Mestier, of Corpus Christi, Texas. In combination with a horizontal revolving table, with stalls for a ball, is a pistol device for dropping the ball into the table while revolving, for playing a game, in which the score is to be counted by the number of the stall into which the ball falls.

A book holder and rest has been patented by Mr. Edwin V. Parker, of Stafford, Vt. Two strips of wood or metal are united at one end by a bowspring, and at their other ends have cross strips, in connection with a U-shaped standard and a spring clip, whereby a book may be held open and its inclination varied as desired.

A wire fence fastener has been patented by Mr. Charles E. Griffith, of Storm Lake, Iowa. The invention consists of a screw with spirally curved eye, which will hold a fence wire away from a tree, but leave a free longitudinal play of the wire through the eye, thus making a simple, cheap, strong, and easily adjustable fastening.

A folding kite has been patented by Mr. Joseph Stumpff, of Brooklyn, N. Y. The kite is made with the inclined bars of the frame in two parts, connected at their adjacent ends by sliding tubes, so the parts can be readily separated and the kite rolled into a compact bundle, to promote convenience in storage and transportation.

An improvement in the manufacture of material for electric insulation has been patented by Mr. William V. Wilson, of Jubilee Street, Mile End, Middlesex, Eng. The invention covers the consolidation of wood or vegetable tar by the use of nitro-cellulose, softened in a special manner, and the mode of its application for insulating electric conducting wires.

An improvement in barbed fences has been patented by Mr. Willis K. Gore, of Johnstown, Penn. According to this invention, the top and bottom rail are formed of two wires twisted together, in combination with intermediate vertical plates, with two barbs at each end, bent and passing in opposite directions through the twisted wire.

An apparatus for loosening up and removing sandbars, etc., in rivers and harbors has been patented by Messrs. Larence A. Johnson and N. E. Johnsen, of Portland, Ore. It is a machine with rotary cutting wheels and plows, to be drawn over a river or harbor bottom behind a steamboat or barge, to break the covering or crust that sometimes forms on sandbars.

A pocket knife has been patented by Mr. Orison Huff, of Lyman, Me. Its peculiar construction adapts it to be opened or closed with one hand, the knife handle being formed of two hollow sections, the upper one with a collar, pin, and projections, and there being a spring pressed and notched locking plate, so that the knife can be opened with thumb pressure and a slight jerk.

An improved boiler has been patented by Mr. Alfred E. Dalley, of Quincy, Mich. This is an improvement of the combined furnace and boiler used by farmers for cooking food for cattle, boiling sirup, etc., and consists in so arranging the flue through which the heat products from the furnace pass that the heat will act more effectually on the bottom than is the case with the present style of furnace and boiler.

An improved letter box has been patented by Mr. Charles F. Maize, of Philadelphia, Penn. This invention covers a special construction of parts of the box, arrangement of guard plates for the newspaper drop, novel self-closing lid for the letter drop, with improved hood, in which the letter drop lid is fitted, to exclude water from the box, all to afford increased security and protection to mail matter deposited in the box.

An insulator for electric wires has been patented by Mr. William W. Beach, of New York city. The invention consists of an insulating block with grooves to receive the wires, and a tongue-like piece for holding the wires in the grooves, and a frame adapted to surround the block, and provided with a series of tongues for partly filling the grooves, so that a series of wires can be held.

A corn sheller has been patented by Mr. Luther Matthews, of Paris, Texas. The invention comprises a double shelling surface of peculiar construction in one plate or bed piece, so a corn sheller with but little weight is produced capable of shelling either one ear, or, by using both hands, two ears at the same time, doing its work easily, and with ready clearance for the shelled corn.

A process for the manufacture of cream tartar forms the subject of a patent issued to Mr. Franz Dietrich, of Munich, Germany. It consists in treating the dissolved argols with phosphoric acid, or its compounds, and then clarifying and decolorizing, the mixture being boiled, the clarifying effected with clay, and finally decolorized with animal charcoal, previously treated with muriatic acid.

An improved lock has been patented by Messrs. Rudolf E. Woodrich, of New York, and Charles Langbien, of Brooklyn, N. Y. This lock is made with an extensible casing and bolt, the bolt resting on independent pivoted cam plates, adjusted to be turned by a key inserted through escutcheons screwed into screw-threaded apertures in the casing, thereby holding the casing in place in the drawer or door.

An improvement in hanging doors has been patented by Mr. Alexander H. P. Leuf, of Brooklyn, N. Y. Crossbars are pivoted in recesses in the ends of the door, and have pivots hinged to their ends to engage with sockets let into the door casing, so the door can be opened in either direction and from either end. The pivots, while serving as hinges, are locked in place by spring pressed bolts, which enter grooves in the pivots.

An improved motion transmitter has been patented by Mr. Henry Gardner, of Bordentown, N. J. It is designed for sewing or other small machines that are frequently started and stopped, and is controlled by the foot of the operator. The invention covers a special form of hanger with square socket and square ended shaft, which may be easily changed for different speeds, and the whole is simple, quick acting, and trustworthy.

An extensible fire escape has been patented by Mr. Paul Kingston, of Hastings, Minn. This fire escape combines a series of lazy tongs, in pairs connected by cross rods, and connecting links with stops, and braces to engage with the stops, so the device may be rendered rigid and firm, and, with guide ropes, may be adjusted and held by a windlass for use at any desired elevation, and may be folded compactly when not in use.

An improved floor scrubber has been patented by Messrs. Peter O. King and Andrew M. Carlson, of Valley City, Dakota Ter. The invention covers a special construction of clamp or holder, with hinged attachment of the clamping side pieces to each other to operate with clamping screws passing through the side pieces, etc., so a substantial and cheap scrubber can be made, and one with increased facility for inserting or removing the rubber or other scrubbing material.

An improvement in pipe and other joints has been patented by Mr. James A. Baldwin, Jr., of East Jaffrey, N. H. It is more particularly for flange joints, and consists in a copper ring, having in its projecting face an annular groove, so made that when the two flanges or pipes are drawn toward each other in tightening up the joint the partially countersunk copper ring will form a close fitting packing between the flanges, so it will resist great pressure, and make the joint equal or superior to a ground one.

An improvement in the manufacture of mosaic and other tiles has been patented by Mr. Jean Larmanjat, of Paris, France. The invention covers a process of brightening the colors of tiles and a mode of moulding them. The brightening is effected by treating the powdered material or cement with soft soap, and the moulding of inlaid designs for ornamental tiles is done in a compound mould, with which the whole of the design may be deposited at one time upon the material forming the base of the tile.

A car door lock has been patented by Mr. James Sharkey, of Honey Creek, Ind. A latch bar is pivoted to the car body below the lower back corner of the door and reaching up at an angle of about 45 degrees to about midway between the vertical edges of the door, where it is connected to form a latch for fastening the door without being locked, and a slide bolt and lock are contrived with the latch bar to lock the door, making a very simple and substantial locking device.

A device for destroying insects has been patented by Mr. Charles J. Gustavson, of Salt Lake City, Utah Ter. This invention covers an apparatus with a spirit lamp beneath a vessel for raising steam, the latter having a flexible pipe to direct the jet as desired, and, for an insect destroyer, poisonous materials are volatilized, while the apparatus may also be used for disinfecting or fumigating a sick room, by using carbolic acid, or other suitable substance, evaporated with the water, the apparatus having special improvements.

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 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.

Mining partner wanted with small capital, German chemist prof. Reference given and required. Address No. 311 Washington Street, New York City. Stephens Bench Vises are the best in use. See ad., p. 173.

Those old Indian chiefs drew peaceful inspiration from the pipe. Their talks and treaties were solemnized amid smoke. There was no drugged tobacco then. They got it pure from the Golden Belt of Carolina. Smokers have in Blackwell's Durham Long Cut the same purity and natural fragrance that bred peace around the council fires.

For best and cheapest acoustic telephone made, address Percival & Hutton, Portville, Cattaraugus Co., 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.

For Sale.—Wishing to move on to my farm, I offer for sale my machine and blacksmith shop, which is located in a thriving town and doing a good business. Will sell with or without tools. Also a good house if desired. Long time given if wished. For terms, etc., address W. M. Preston, Monticello, Jones County, Iowa.

If you want the best cushioned Helve Hammer in the world, send to Bradley & Company, Syracuse, N. Y. Sleeve nuts, best, cheapest. Pittsburgh Sleeve Nut Works. Iron and Steel Drop Forgings of every description. R. A. Belden & Co., Danbury, Ct.

"The Sweetland Chuck." See ad. p. 108. Hoisting Engines for Mines, Quarries, Bridge Builders, Railroad Construction, etc. Send for catalogue. Copeland & Bacon, New York.

Iron Planer, Lathe, Drill, and other machine tools of modern design. New Haven Mfg. Co., New Haven, Conn. Pumps—Hand & Power, Boiler Pumps. The Goulds Mfg. Co., Seneca Falls, N. Y., & 15 Park Place, New York. Fox's Corrugated Boiler Furnace, illus. p. 354. Hartmann, Le Doux & Maeccker, sole agents, 134 Pearl St., N. Y. For Freight and Passenger Elevators send to L. S. Graves & Son, Rochester, N. Y.

Best Squaring Shears, Tinner's, 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 of Canadian patent, \$40. Various other foreign patents may also be obtained. For instructions address Munn & Co., Scientific American Patent Agency, 261 Broadway, New York.

Guil & Garrison's Steam Pump Works, Brooklyn, N. Y. Steam Pumping Machinery of every description. Send for catalogue. For Power & Economy, Alcott's Turbine, Mt. Holly, N. J.

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

Wanted.—Patented articles or machinery to make and introduce. Gaynor & Fitzgerald, New Haven, Conn. Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J. 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., 139 Center St., N. Y. Improved Skinner Portable Engines. Erie, Pa.

Straight Line Engine Co. Syracuse, N. Y. Best in design, materials, workmanship, governing, no packing. Curtis Pressure Regulator and Steam Trap. See p. 142.

Woodwork'g Mach'y. Rollstone Mach. Co. Adv., p. 141. C. B. Rogers & Co., Norwich, Conn., Wood Working Machinery of every kind. See adv., page 142.

The Porter-Alten High Speed Steam Engine. Southwark Foundry & Mach. Co., 430 Washington Ave., Phil. Pa. Ajax Metal Company, Phila. Clamer's Ajax Metals for railroad, rolling mill, engine bearings, cocks, and valves. Drop Forgings. Billings & Spencer Co. See adv., p. 174.

Railroad & Manufacturers' Supplies. Steam Packing of all kinds. Greene, Tweed & Co., 118 Chambers St., N. Y. Job lots in Rubber Belting, Packing, Tubing, and Hose. 75 per cent off belting. John W. Buckley, 156 South Street, New York.

Steam Hammers, Improved Hydraulic Jacks, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York. Emerson's 1884 Book of Saws. New matter. 75,000. Free. Address Emerson, Smith & Co., Beaver Falls, Pa.

Hoisting Engines. Friction Clutch Pulleys, Cut-off Couplings. D. Frisbie & Co., Philadelphia, Pa. Best Popular Science Works, 15 cents. J. Fitzgerald publisher, 20 Lafayette Place, N. Y. Catalogue free.

Gould & Eberhardt's Machinists' Tools. See adv., p. 173. Walrus Leather, Emery, Nickel Anodes, Nickel Salts, and Polishers' Supplies. Greene, Tweed & Co., New York. Barrel, Keg, Hoghead, Stave Mach'y. See adv. p. 173.

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. For Mill Mach'y & Mill Furnishing. see illus. adv. p. 172.

Lathes, Planers, Drills, with modern improvements. The Pratt & Whitney Co., Hartford, Conn. Mineral Lands Prospected, Artesian Wells Bored, by Pa. Diamond Drill Co. Box 423. Pottsville, Pa. see p. 174. For best low price Planer and Matcher, and latest Improved Sash, Door, and Blind Machinery, Send for catalogue to Rowley & Hermance, Williamsport, Pa.

Steam Pumps. See adv. Smith, Vaile & Co., p. 174. Gears.—Grant, 4 Alden St., Boston.—Water motors.

NEW BOOKS AND PUBLICATIONS.

THE MEDICAL DIRECTORY OF PHILADELPHIA FOR 1884. Edited by Samuel B. Hoppin, M. D. F. Blakiston, Son & Co., Philadelphia. Price, \$1.50.

This is an alphabetical and street list of physicians and directory of dentists, druggists, medical societies, homes, and charitable institutions.

THE PRONUNCIATION OF GERMAN. A PROGRESSIVE STUDY OF THE SOUNDS OF THE GERMAN LANGUAGE, WITH DIRECTIONS FOR PRODUCING THEM ACCURATELY. By Charles F. Kroeh, A. M., Hoboken, N. J. Published by the author.

The title of this little work is a good resume of its contents. It constitutes No. 1 of a series of drill books by the same author, which are in preparation, and which will treat of the German and French verb. The book is an excellent one for the purpose, being modeled on the "rational method," for which Professor Kroeh is well known.

The Railways and Tramways of New South Wales, according to the report of the Commissioner from Sydney, Sept. 1, 1883, had cost, up to the close of 1882, £16,776,642, and £11,000,000 more had been authorized to be raised for the completion of work in progress. The average interest paid for railway loans has been 4.26 per cent. There are 1,321 1/2 miles opened for traffic, of which 38 miles have double track, and 889 miles of road laid out are to be finished. The report treats very thoroughly of the details of the business done and the condition and equipment of the roads.



HINTS TO CORRESPONDENTS.

No attention will be paid to communications unless accompanied with the full name and address of the writer.

Names and addresses of correspondents will not be given to inquirers.

We renew our request that correspondents, in referring to former answers or articles, will be kind enough to name the date of the paper and the page, or the number of the question.

Correspondents whose inquiries do not appear after a reasonable time should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them.

Persons desiring special information which is purely of a personal character, and not of general interest, should remit from \$1 to \$5, according to the subject, as we cannot be expected to spend time and labor to obtain such information without remuneration.

Any numbers of the SCIENTIFIC AMERICAN SUPPLEMENT referred to in these columns may be had at the office. Price 10 cents each.

Correspondents sending samples of minerals, etc., for examination, should be careful to distinctly mark or label their specimens so as to avoid error in their identification.

(1) J. M. H. asks how saltpeter acts when used with salt and sugar to preserve meat. What is the effect? A. The action of saltpeter would be that of an antiseptic, that is, it would tend to prevent fermentation or putrefaction. Borax or boracic acid is more commonly used as a preservative for meat. The use of sugar in this connection we think would hardly be desirable or even necessary.

(2) W. S. N.—Pearline is simply a trade name given by James Pyle to a soap manufactured by him. We do not know its composition, and cannot tell unless a chemical analysis of it were made, but from its title we think very likely that it contains pearl ash,

or potassium carbonate. Bluing may be made by treating 1 ounce pure Prussian blue with 2 ounces concentrated hydrochloric acid.

(3) E. L. N.—The paste sent consists of rouge (red chalk) mixed with some oil or tallow, probably boiled linseed oil.

(4) A. W. G. asks how the polishing paste for cleaning and restoring tarnished nickel is made?

(5) S. S. asks: How many "Bunsen" cells of 1 gallon capacity will it require to produce an arc light of one-eighth inch carbon candle, length of conducting wires 20 feet?

(6) J. C. W. asks: What substance can be used as a conductor of electricity, and yet have but little or no spring?

(7) J. H. D. asks: Is there any substance which can be mixed with ground talc, so as to form a paste which will harden in moulds, and yet be fireproof?

(8) G. S. B. asks: 1. Can magnetic force be transformed into electric force (the force of permanent steel magnets, I mean)?

(9) W. A. asks: 1. What is the thickness of the carbon used in the Blake transmitter, and how is it made?

(10) B. V. F. asks: Will two Leclanche batteries of good size heat fine wire so as to be practicable for lighting gas?

(11) S. J. B. asks what he can use to preserve paste or starch for mounting photographs?

(12) S. T. asks how to make solution for cast iron, so it would have coppered surface?

(13) C. O. R. asks: 1. Is there any diamagnetic substance known that is quite or nearly perfect?

(14) G. H. asks: 1. How may eggs long preserved by cold storage or other methods be detected?

(15) J. D. writes: For finding the nominal horse power of a compound engine we have the rule:

Formula for finding nominal horse power: (d^2 + D^2) / 90 or (d^2 + D^2) / 32

According to some makers, the divisor is 90 circular inches, with others 32. However, what I wish to know

is, wishing to reckon the diameters of the high and low pressure cylinders from the nominal horse power, I would like to know whether there is, or which rule is generally used by builders.

N.H.P. = (d^2 + D^2) / n, where

d = dia. of H.P. cylinder. D = " " L.P. " n = circular inches, which may be 30 to 32 or 33, the lower denominator for the higher pressure, say of 90 or 100 lb; and for the diameter of the H.P. cylinder:

sqrt(N.H.P. \* n / (1 + r))

where r is the ratio of capacity of the low to the high pressure cylinder, and the diameter of the low pressure cylinder = d/r. Example for an engine of 300 N.H.P.

dia. of H.P. cylinder = sqrt(200 \* 33 / (1 + 4)) = 36.3 inches.

And dia. of L.P. cylinder = 36.3 \* 4 = 72.6 inches. 2. What relation do the diameters bear to each other, or do the dimensions of high and low pressure cylinders depend upon their areas?

(16) J. F. B. asks how to make a small incandescent electric lamp, or tell me the number of a SUPPLEMENT describing one, if there is one?

(17) W. S.—1. The painting and bronzing of radiators retards their heating qualities.

(18) J. D. P.—Ordinary moulding sand is used for zinc castings just as for iron.

(19) S. P. C. asks for a receipt for making a carbolic dip into which stock may be plunged for killing lice and mites?

(20) H. E. H. asks: 1. Will two cylinders of same stroke, with different diameters and same sized ports, exert the same power?

(21) A. B. N. asks how papier mache is made? A. Papiermache is made by pasting or gluing sheets of straw or other thick paper together when wet.

(22) G. W. E. asks if there are any steam or electrical buggies in use? A. There have been several electrical and steam buggies and tricycles invented.

(23) T. J. T. asks: 1. How long will cottonwood, Linn. (basswood) and red elm last in fence pickets?

(24) F. J. del C. asks how to make the so-called parchment paper. What strength of acid to use, and where to obtain or how to make it of the requisite strength?

(25) J. K. asks: 1. What is the greatest speed that could be attained by a steamboat, a screw propeller, in smooth water, of the following dimensions, and what description of boiler or boilers and engines would be the most suitable, and the amount of power required?

not more than 4 feet? A. We think about 16 miles per hour, if of good model and very light.

(26) I. H. F. sends us a japanned buckle. A. The sample is dipped. String upon very small wires. Thin the japan with turpentine.

(27) L. H. D. writes: I am using water taken from a tank lined with ordinary sheet zinc, for greenhouse purposes.

(28) W. F. H. asks: Can you inform me how the cement is made which gas fitters use on joints after they are put together and found to leak slightly?

(29) J. E. E. asks: Does sound travel a greater distance north and south and more rapidly than it does east and west, wind currents being equal?

(30) E. G. C. asks regarding the modern method of rendering glass articles iridescent.

(31) N. S. H. asks: 1. For receipts for mullage and glue combined, called Egyptian Tenexine?

(32) R. H. H. asks: What is the best thing to clean buckskin mittens, and also what will clean a bronze plate lamp hanger?

(33) A. W. B. asks: 1. If borax renders shellac soluble in water, will not the compound after being used as varnish or cement be then soluble and easily injured by being washed, etc.?

(34) J. J. D. asks: How sulphocyanide of ammonia is prepared? A. This salt may be prepared by mixing hydrocyanic (prussic) acid with ammonium polysulphide.

(35) D. P. S. asks: Will you tell me through Notes and Queries why it is that certain salts or acids when dissolved or mixed with water produce heat, while others produce cold?

(36) E. K. B. writes: 1. Will you please give me the candle power of the calcium light, say the light used by Mr. Stoddard in throwing his pictures upon the screen?

(37) S. J. D. asks: 1. What power is exerted by a screw one-eighth pitch, 1 in. diameter. Pointed angle of 30° working between 2 pins, angle to suit screw; in other words, what weight will they lift?

INDEX OF INVENTIONS For which Letters Patent of the United States were Granted March 4, 1884, AND EACH BEARING THAT DATE.

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

Table listing various inventions and their patent numbers, including: Anæsthetic cases, apparatus for administering, 294,479; Announcer, speaking tube, J. Walter, 294,635; Axle, vehicle, Kennedy & Warner, 294,632; Bag, See Paper bag, School bag, 294,632; Bag holder, E. H. Mo: ehouse, 294,659; Bag holder, A. Rowinson, 294,505; Bale tie, Garland & Becker, 294,609; Bale tie, wire, W. Hewitt, 294,386; Baling press, J. Watson, 294,551; Baling press, duplex, J. La Dow, 294,638; Banjo, H. C. Dobson, 294,451; Battery, See Secondary battery, 294,363; Battery, A. Hald, 294,455; Bearing, anti-friction, T. R. Ferrall (r), 10,456; Bearing, self-lubricating, T. R. Ferrall (r), 10,456; Bed spring connector, twin, J. S. Dixon, 294,593; Bell tightener, M. L. Russell, 294,678; Bessemer converter, H. Schulze-Berge, 294,684; Bicycle, E. G. Latta, 294,640; Bicycle saddle, F. Lillbridge, 294,645; Bicycle saddle spring, O. M. Mitchell, 294,655; Billiard tables, automatic chalk holder for, W. Sherwood, 294,516; Block, See Toy building block, 294,569; Blower for fire places and stoves, adjustable, F. S. Bissell, 294,448; Boiler, A. E. Daley, 294,448; Boiler furnace, steam, I. L. Merrell, 294,654; Book holder and rest, E. V. Parker, 294,498; Boot or shoe soles, beating out machine for, J. W. Rogers, 294,506; Bottle stopper, G. D. Corey, 294,443; Bottle trap, removable, G. M. McCloskey, 294,489; Bottles, jars, etc., automatic stopper for, S. P. M. Tasker, 294,415; Box, See Fare box, Letter box, 294,486; Box making and covering machine, Manneck & Witte, 294,385; Bracket, E. S. Hemmenway, 294,611; Brick, iron paving, J. M. Glenn, 294,611; Brick machine, A. Cramer, 294,368; Bridge, truss, M. C. Frits, 294,608; Brush trimming machine, T. Coldwell, 294,583; Bubble blower, W. S. Fickett, 294,728; Buckle, automatic rope, S. & F. Seib, 294,408; Buckle, harness, W. A. Allen, 294,561; Burial casket, F. A. Field, 294,456; Burner, See Hydrocarbon burner, 294,409; Burner, I. W. Shaler, 294,504; Button fastener, G. W. Prentice, 294,517; Button fastener, F. A. Smith, Jr., 294,411; Button holes, protecting, G. L. Crandal, 294,446; Button or stud, N. Nelson, 294,495; Button setting instrument, G. W. Prentice, 294,744; Button, etc., sleeve, S. C. Howard, 294,468; Button, sleeve, Howard & Schott, 294,469; Buttons, machinery for and process of finishing, H. W. Merritt et al., 294,490; Cables, repairing, defects in the conductors of lead, R. S. Waring, 294,549; Can nozzle, R. C. Anderson, 294,427; Candy, S. H. Britton, 294,575; Cannon, pneumatic, W. A. Bartlett, 294,348; Car, Briggs & Pritchard, 294,574; Car brake, A. Bolzano, 294,570; Car coupling, A. H. Armstrong, 294,345; Car coupling, W. A. Benjamin, 294,565; Car coupling, Pegram & Kester, 294,501; Car coupling, F. F. Pendexter, 294,502; Car coupling, A. D. Stansbury, 294,695; Car coupling, A. C. Stevens, 294,696; Car door lock, J. Sharkey, 294,513; Car grip, electric, J. C. Henderson, 294,618; Carpet fastener, J. A. Markoe, 294,397; Carbureting machine, Tirrill & Wilson, 294,527; Carriage, child's, Poolman & Marks, 294,668; Carriages, canopy holder for children's, A. S. Fitch, 294,376; Cartridge loader and cap expeller, L. Keller, 294,630; Cartridge weighing and assorting machine, P. Butler, 294,363; Casting, threaded, J. B. Larkin, 294,639; Chain attachment, watch, H. M. Herring, 294,733; Chain, drive, W. H. Dickey, 294,673; Chain for draperies, C. A. Schmidt, 294,682; Chain link, ornamental, V. Draper, 294,595; Chain link, ornamental, H. M. Herring, 294,734; Chain, ornamental, H. A. Church, 294,580; Chair, See Opera chair, Tilting chair, 294,433; Chair, W. H. Beardsley, 294,467; Charm telescope, C. Hoheisen, 294,467; Churn cover fastening, Schmidt & Brammer, 294,706; Churn dasher, Webb & Brooks, 294,706; Cleaning and renovating fabrics, composition for, T. Ewing, 294,727; Clevis for reversible plows, F. A. Barrows, 294,431; Clip, See Tug clip, 294,552; Clock, electric, G. B. Webb, 294,671; Clutch, friction, J. K. Proctor, 294,671; Cock or faucet, water and steam, J. Richter, 294,674; Coffee pot attachment, Ballin & Hoff, 294,347; Coffins into graves, device for lowering, G. T. Conrath, 294,366; Compositing stick, W. H. Golding, 294,378; Compositing stick, R. S. Robson, 294,677; Cooler, See Milk cooler, 294,600; Coop or kennel, folding, H. Evesson, 294,600