

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.

Two valuable Patents for sale for Boot and Shoe Seam Rubbing Testimonials. The best in use. W. Manley, Rochester, N. Y.

Use the Patent Improved Sheet Iron Roofing and Drip Crimped Siding made by A. Northrup & Co., Pittsburg, Pa. Send for circular and prices.

Novelty Makers address Fred. E. Heimig, 92 1st St., Louisville, Ky.

Writing made easy. See advertisement of D. MacKinnon & Co. page 157.

Jack screws cheap. Circular free. Guthrie Bros., Galva, Ill. A. L. Jones' Self-Regulating Steam Trap. Most reliable one made. W. E. Kelly & Bro., General Agents, 46 Cortlandt St., New York.

Vertical Engines, 10 to 15 H. P., thoroughly well made. John Hartrick & Co., 47 Gold street, New York.

For Sale—One 2d Hand Planer and Matcher, Tompkins' make. Planes 24 in., match 12. 2 sets 14 in. knives and 2 sets matcher knives. Matcher heads and spindles new. In first class order. Sold for want of use. Price \$200. Full particulars on application. Address Lock Box 24, Clyde, N. Y.

Magneto Call Bells for Telephone Lines. The Best. No battery required. Bunnell, 112 Liberty street, N. Y.

Write to E. & F. Gleason, 56 Canal street, Philadelphia, for standard wood tools.

Sperm Oil, Pure. Wm. F. Nyc, New Bedford, Mass.

Power & Foot Presses, Ferracute Co., Bridgeton, N. J. Telephones.—J. H. Bunnell, 112 Liberty St., New York.

Bolt Forging Machine & Power Hammers a specialty. Send for circulars. Forsaith & Co., Manchester, N. H.

Catalogue of Scientific Books. Mailed free on application. E. & F. N. Spon, 446 Broome St., New York.

Pulverizing Mills for all hard substance and grinding purposes. Walker Bros. & Co., 23d and Wood St., Phila.

For the most durable and economical Paint for cars, roofs, bridges, iron, brick and wooden buildings, address Pittsburg Iron Paint Company, Pittsburg, Pa.

National Steam Pump. Simple, reliable, and durable. Send for catalogue. 46 Cortlandt St., New York.

J. C. Hoadley, Consulting Engineer and Mechanical and Scientific Expert, Lawrence, Mass.

For Town and Village use, comb'd Hand Fire Engine & Hose Carriage, \$350. Forsaith & Co., Manchester, N. H.

Boilers ready for shipment, new and 2d hand. For a good boiler, send to Hillis & Jones, Wilmington, Del.

Punching Presses, Drop Hammers, and Dies for working Metals, etc. The Stiles & Parker Press Co., Middletown, Conn.

All kinds of Saws will cut Smooth and True by filing them with our New Machine, price \$2.50. Illustrated Circular free. E. Roth & Bro., New Oxford, Pa.

Hydraulic Presses and Jacks, new and second hand. Lathes and Machinery for Polishing and Buffing Metals. E. Lyon & Co., 470 Grand St., N. Y.

Nickel Plating.—A white deposit guaranteed by using our material. Condit, Hanson & Van Winkle, Newark, N. J.

The Cameron Steam Pump mounted in Phosphor Bronze is an indestructible machine. See ad. back page. 1,000 2d hand machines for sale. Send stamp for descriptive price list. Forsaith & Co., Manchester, N. H.

Presses, Dies, and Tools for working Sheet Metals, etc. Fruit and other Can Tools. Bliss & Williams, Brooklyn, N. Y., and Paris Exposition, 1878.

Manufacturers of Improved Goods who desire to build up a lucrative foreign trade, will do well to insert a well displayed advertisement in the SCIENTIFIC AMERICAN Export Edition. This paper has a very large foreign circulation.

Bound Volumes of the Scientific American.—I will sell bound volumes 4, 10, 11, 12, 13, 16, 28, and 32, New Series, for \$1 each, to be sent by express. Address John Edwards, P. O. Box 773, New York.

For Solid Wrought Iron Beams, etc.. see advertisement. Address Union Iron Mills, Pittsburg, Pa. for lithograph, etc.

Solid Emery Vulcanite Wheels.—The Solid Original Emery Wheel—other kinds imitations and inferior. Caution.—Our name is stamped in full on all our best Standard Belting, Packing, and Hose. Buy that only. The best is the cheapest. New York Belting and Packing Company, 37 and 38 Park Row, N. Y.

Best Wood Cutting Machinery, of the latest improved kinds, eminently superior, manufactured by Bentel, Mergedant & Co., Hamilton, Ohio, at lowest prices.

Water Wheels, increased power. O. J. Bollinger, York, Pa.

We make steel castings from 1/4 to 10,000 lbs. weight, 3 times as strong as cast iron. 12,000 Crank Shafts of this steel now running and proved superior to wrought iron. Circulars and price list free. Address Chester Steel Castings Co., Evelina St., Philadelphia, Pa.

Diamond Engineer, J. Dickinson, 64 Nassau St., N. Y.

Machine Cut Brass Gear Wheels for Models, etc. (new list). Models, experimental work, and machine work generally. D. Gilbert & Son, 212 Chester St., Phila., Pa.

Holly System of Water Supply and Fire Protection for Cities and Villages. See advertisement in Scientific American of last week.

Kreider, Campbell & Co., 1030 Germantown Ave., Phila., Pa., contractors for mills for all kinds of grinding. Cutters, shaped entirely by machinery, for cutting teeth of Gear Wheels. Pratt & Whitney Co., Manufacturers, Hartford, Conn.

Improved Steel Castings; stiff and durable; as soft and easily worked as wrought iron; tensile strength not less than 55,000 lbs. to sq. in. Circulars free. Pittsburg Steel Casting Company, Pittsburg, Pa.

The Turbine Wheel made by Risdon & Co., Mt. Holly, N. J., gave the best results at Centennial fets.

Hand Fire Engines, Lift and Force Pumps for fire and all other purposes. Address Rumsey & Co., Seneca Falls, N. Y., U.S.A.

For Shafts, Pulleys, or Hangers, call and see stock kept at 79 Liberty St. Wm. Sellers & Co.

Wm. Sellers & Co., Phila., have introduced a new Injector, worked by a single motion of a lever.

NEW BOOKS AND PUBLICATIONS.

GEMS OF AMERICAN SCENERY. The White Mountains. New York: Harroun & Biebstadt. Price \$3.

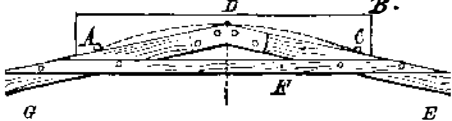
This attractive little book marks a new departure in bookmaking, and one which cannot fail to commend itself to many. Its illustrations are stereoscopic views printed in permanent black by the Albertype process, a flap of the cover carrying the lens required for seeing the views stereoscopically. Thus we have in one compact volume a stereoscope (which may be used also with detached views), two dozen unfading views of the more striking bits of White Mountain scenery, and a series of brief descriptions of the scenes displayed. The novel idea has been carried out so successfully that it is quite safe to predict the speedy as well as wide and useful application of the plan to other than scenic illustration. In mechanical and scientific works, for example, especially those intended for the young, stereoscopic illustrations, showing the objects with actinic accuracy and solid, cannot but be exceedingly advantageous. Such illustrations would be as much superior to the carbon-printed photographs now coming into use, as the latter are superior to the old-fashioned woodcuts and lithographs.

Notes & Queries

(1) C. O. B. asks: 1. Can a short line of telegraph be run by burying plates of copper and zinc in the ground, and if so, how would I proceed? A. Yes; but a number of plates would be required, and they would have to be buried in earth that is constantly moist. It would be better to use two or three gravity cells. 2. What would perpetual motion be? Must it be independent of the power of magnetism and gravitation? A. Perpetual motion is believed to be an impossibility. Permanent magnets and gravitation are the mainstays of seekers for perpetual motion. 3. Was there ever a wheel or other piece of mechanism made to run by permanent magnets and gravitation? A. No. 4. Could not a few very large cells be used for producing the electric light, since the larger the cells the greater the quantity of electricity, hence the more heating power? A. Yes, but medium sized cells are generally used. 5. Would not ground wires sunken at different places around a building, and connections made to flues, spouts, and other ironwork of the house, be a good protection against lightning? A. Yes, if the wires were attached to large plates or bunches of metal scrap buried in moist earth. 6. Would a soft iron wire connecting both ends of a Speight permanent magnet tend to retain its magnetism? A. Yes, but heavy armatures would be better.

(2) "Lowell" asks how to remove India ink from the flesh. A. The particles of carbon must be cut out.

(3) J. G. says: I have three points through which I wish to draw a section of a circle whose radius is too large to admit of being drawn by either compasses or trammels. Can you give me any practical means of



accomplishing this object? A. Suppose that A D C are the points through which the arc of circle requires to be drawn. Take two strips of wood, E D and G D, of which one edge must be planed true. Place them so that their planed edges lie even with the three points, as shown in the cut, beveling them off at the ends where they meet (at D). Then fasten the ends together by nailing a piece across the joint at D, and nail on a brace, F. Drive a nail in the points, A C. A pencil held against the strips (at any point), while the frame is moved laterally and against the nails at C, D, will describe the arc required, as shown by the dotted lines.

(4) J. W. B. asks: What composition is used in casting stereotype plates? A. Lead, 69; anti-mony, 15; bismuth, 15.

(5) J. E. J. asks: 1. Will small holes in the coating of a Leyden jar cause an escape of electricity? A. No. 2. Will a cracked Leyden jar contain electricity? A. If the crack is in that portion of the jar that is covered with tinfoil the electric fluid will probably pass from one coating of the jar to the other.

Some time ago I made a paper tube from a long, narrow strip of newspaper, turned down the large end, and near it cut a hole. I then lit the small end, but instead of lighting the gas which came out at the hole, I turned it into a bottle, intending to experiment with it afterwards; when I took up the bottle some time after I found that the gas had resolved itself into a heavy, viscid, amber colored liquid, with that peculiar odor observable where there has been a conflagration. The gas was not absorbed by any moisture in the bottle, for it (the bottle) had been standing near the fire all day. What kind of gas is it, or what is the viscid substance? A. When woody or vegetable fiber is subjected to destructive distillation the products, besides illuminating gas, are chiefly water, pyroigneous acid (wood vinegar), creosote, wood spirit (methyl alcohol), and, as the temperature rises, various hydrocarbons, as p. aff. fin. The character of the product depends upon the nature of the fiber distilled and the temperature employed.

(6) A. H. P. L. asks: What is used to stick tinfoil to a jar, in making a Leyden jar? A. Use alcoholic shellac varnish, of the consistency of molasses.

(7) J. E. T. writes: Having found Dr. Lionel Beales' and all other injections for microscopic specimens containing Prussian blue to fade, it has occurred to me to experiment with the aniline violet or blue. Will you kindly direct me to a book on this subject? I want a permanent blue or violet, or at least some way to make these colors fast. Do you know of a good book on the aniline colors, how to make them, to use them, and especially to prevent the blue or violet

from fading? A. In common with other aniline colors the aniline blues and violets are not permanent dyes, though the blues are among the most permanent of this class of dyes. For dyeing animal tissues blue the color (soluble or Nicholson blue) may be dissolved in hot water rendered slightly alkaline with borax, and the full tint developed and fixed upon the dyed substance by means of dilute sulphuric acid. The violets require no mordants and are much less permanent than the blues; the fading cannot be avoided. Tissues may be stained a good violet by the following solution: Extract hæmatoxylin, 4 drachms; alum and potassium sulphate, 2 drachms; water, 2 fluid ozs.; mix, filter, and dilute with ten or twelve volumes of water or glycerin. Fresh tissues require more time than those which have been hardened in alcohol or chromic acid. You may consult Reiman's "Aniline and its Derivatives," Calvert's "Coal Tar Colors," and Schutzenberg's "Traite de Materiel Colorante."

(8) J. M. asks whether a diamond can be burned. A. Heated to whiteness the diamond burns readily in oxygen; also in air, but more slowly.

(9) T. H. asks what to use in making aniline black ink that will give it a beautiful gloss. A. Try a concentrated solution of borax 1 part, and shellac 4 parts, in boiling water.

How can I make the liquid plating used for polishing silver? By slightly rubbing on silver it gives it a splendid polish. The liquid you mention is doubtless the "magic silver plating fluid" we have so often referred to in these columns—an aqueous solution of mercuric chloride (corrosive sublimate) and nitrate. The luster of the film of quicksilver amalgam formed when it is applied to the metallic surfaces is fictitious, and soon disappears. The preparation is very poisonous, and several cases of mercurial poisoning have resulted from its use on spoons and similar articles.

(10) F. D. can make a good mucilage as follows: Dissolve 2 ozs. of dextrin in 6 ozs. of hot water, and add 1 oz. or more of acetic acid.

(11) G. P. S. asks how ginger ale extract is made. (1) Bruised ginger, 3/4 oz.; boil for half an hour in 1 quart of water, replacing the water lost by evaporation. Strain the extract, evaporate it four fifths, and add sugar, 1 lb.; cream of tartar, 1/4 oz.; lemon juice, 1 fluid oz. For use dissolve in one gallon of water. (2) Boil 1 1/2 lb. of bruised ginger in 3 gallons of water, strain and concentrate as before, and add sugar 20 lbs.; lemon juice, 1 pint; honey, 1 lb.; sufficient for 18 gallons. (3) Powdered sugar, 2 drachms; powdered ginger, 15 grains; bicarbonate of soda, 26 grains. Mix, and wrap in a blue paper. Tartaric acid, 30 grains; wrap in a white paper. For use dissolve each in half a glass of water, and mix.

How can I make carbonic acid gas by the bicarbonate process? A. Mix together 14 parts of bicarbonate of soda, and 15 parts of tartaric acid; both perfectly dry and powdered; on contact with water this powder evolves carbonic acid briskly.

(12) M. N. asks how to make a good, cheap furniture polish. A. Pale shellac, 3 lbs.; mastix, 6 ozs.; alcohol of 90 per cent, 3 quarts. Digest together in the cold in a well stoppered vessel, and occasionally agitate until solution is effected.

(13) H. W. M. asks why exploring expeditions are not sent to the South Pole. A. The South Pole is more inaccessible than the North Pole. It is now in the glacial stage.

(14) H. S. D. asks how to make a cheap, practical acoustic telephone which will operate over two miles of wire. A. You will find description of a good acoustic telephone on p. 75 of current volume in answer to No. 28, but it cannot be recommended for the distance named. A telephone of the Bell form would do much better.

(15) A. H. L. asks: 1. Is gas carbon expanded by the passage of an electric current? A. We think not to a perceptible degree. 2. If not, how is the receiving diaphragm vibrated in Edison's telephone? A. Edison's receiver is substantially the same as the Bell telephone. 3. What are the material and the thickness and size of the sounding board in the microphone? A. We do not know that dimensions have been given. 4. Would ferrotype platework if the current were prevented from crossing it? A. No.

(16) S. K. O. asks: What can I waterproof a canvas tent with? A. Saturate the material with a strong hot aqueous solution of soap, and after a short time with hot solution of alum or aluminum sulphate.

What will drive away or destroy mould in a cellar? A. Lime whitewash.

(17) G. E. D. asks: What is the composition and weight of the dime, three cent, five cent, and one cent pieces? A. Dime: silver 900, copper 100; weight, 2.5 grammes; five cent pieces: copper 75, nickel 25; weight, 77.16 grains; three cent piece has the same composition as the five; weight, 30 grains; one cent piece, copper 95, tin 3, zinc 2; weight, 48 grains.

Can coke be used as a substitute for carbon plates in the galvanic battery? A. See pp. 198 (2), and 203 (2), vol. 37, SCIENTIFIC AMERICAN.

(18) R. P. G. asks for the process of bluing watch and clock springs, screw heads, etc. A. A very regular temperature is required for bluing steel. The articles must be polished, and buried in wood ashes heated to about 550° until desired color is obtained.

(19) J. A. G. asks: 1. Can electricity be produced in sufficient quantity from an ordinary battery to produce any light with charcoals points? If so, how best prepare battery? A. You may get a very small light from ten cells of Grenet battery. 2. Can anything but glass jars be used for battery? A. Coat wooden boxes with the following mixture, melted: 2 parts of wax, 10 parts of common rosin, 2 parts of red lead, and 1/2 part of gypsum. 3. What size wire is best to connect telephones without magnets? A. A thread is better than a wire for an acoustic telephone. If wire is used it should be No. 36.

(20) A. B. C. asks: 1. What is the trouble with my telephone? I use a magnet 5/16 x 3/8. The diaphragm, 2 3/4 inches, is made of tin-type, with the collo-

dion scraped off. The helix is made of 3/4 oz. of copper wire No. 40, silk insulated and covered with shellac varnish. It is placed on the south pole of the magnet, and is wound right handed. The line wire is about 30 yards long. It is iron, not galvanized, No. 17. The ground connection is made by filling a hole with zinc and tin scraps, and several feet of wire are placed on it, and then one half a peck of salt. The wire in the ground is not the same size as my line wire. A. The trouble probably lies in your ground connections. For the distance named a return wire, we think, would answer better than the ground. 2. How near will I have to put my diaphragm from the magnet? I put it about the thickness of cardboard. I have failed to get any sound from it. A. The magnets are properly adjusted.

(21) L. F. K. writes: In a recent issue of the SCIENTIFIC AMERICAN I saw directions for making an acoustic telephone. I made one, but before beginning work on it doubted whether the sealing wax would hold the plate against a taut line, and the event proved me to be correct. I then placed a gum ring between the plate and wood, and secured the plate to the wood with a few brads, and the apparatus worked more satisfactorily than a Bell telephone, with which I had experimented. I wanted to put up "my own make," but the difficulty is that about 20 feet of the line at each end is exposed to the air, and this arrangement cannot be altered. Any twine that I can use will not last more than a few weeks. Can you suggest any preparation of the twine that will enable one to use it, say, for a few months? A. To secure the diaphragm to the wood a good quality of sealing wax may be used successfully by heating the diaphragm and applying a little of the sealing wax near its periphery. Shellac 4 parts, pitch 2 parts, Venice turpentine 1 part, melted together, make a good cement for this purpose. Twine may be rendered more durable by boiling it first in a strong soap solution and then in strong solution of alum.

(22) J. A. B. asks: What is the best and most economical way of extracting the grease and oil contained in the scrapings, trimmings, etc., of leather? It contains about 50 per cent of tallow and oil, and in some cases more. A. You may digest the waste for several hours with enough carbon disulphide to cover it, pressing out the excess of liquid on removal; repeat with more waste, and when the solvent becomes nearly saturated draw it off, and subject the solution to distillation in a hot water or steam bath—the solvent being recovered by a suitable condenser, and the oil and fatty matters remaining in the still.

(23) A correspondent suggests that railway engineers be provided with telephones, so that in case of accident they might be connected with the telegraph wires and thus establish a communication with the stations.

(24) L. T. S. writes: I send by mail a piece of stone containing a fine yellow dust. What is it? A. The rock very probably contains nothing of value; the glistening particles are mica.

Can you tell me how to make a small exhaust blower large enough to take sawdust from a circular saw table and dust from an emery wheel of small size? A. For blower see reply to C. M. B. (27) in No. 5 of current volume. Connect your exhaust pipes with the center of the fan casing. The fan should make from 1,200 to 1,500 revolutions per minute.

(25) H. P. asks for a recipe for an indelible ink to use on a linen stamp. A. See p. 27 (31) current volume, and p. 107 (37).

(26) E. P. asks how to use an acid that produces a frosted appearance upon glass. The name I know the acid by is "white acid." A. The acid you refer to is hydrofluoric acid—produced by heating powdered fluor spar and strong sulphuric acid together in a platinum or leaden retort, and absorbing the gaseous product in cold water contained in a bottle of gutta serena. Warm the glass, cover it with a uniform film of wax or paraffin, through which to the surface of the glass the design is afterward etched with a steel point, then expose the surface to the acid or acid gas.

Can you tell me how to make photographs transparent, and then varnish them, or by any other means render them capable of being exposed to air and light without opaque spots appearing? A. Allow the photograph to remain in water until thoroughly soaked, then place it between blotting paper and let it remain until just damp enough to be pliable. Then coat the face of the picture with good starch paste and lay, face down, on the glass. Commence in the center of the picture, and rub outward toward the edges to dispel all air and excess of paste, care being observed not to get paste on the back of the print. While rubbing keep the paper damp with a sponge. When dry lay on a heavy coat of castor oil, and after a time rub off the excess of oil with a cloth. After standing a day or two it may be colored. Cover the back with a thin plate of glass, and bind the edges.

(27) G. G. C. asks how rubber printing type are made? I know how to make rubber stamps, but do not know how they make solid rubber type. How do they make the single letters? A. The prepared rubber is moulded by pressure while warm, using stearate powder on the moulds, and vulcanized as described on p. 32, SCIENTIFIC AMERICAN, current volume.

(28) F. R. A. writes: I wish to make etchings on zinc plates, that is, I wish to make a drawing on zinc with some ink that will resist sulphuric or muriatic acid so I can obtain a relief plate. What are the ingredients of such an ink? A. Genuine asphaltum, 1 part; oil of turpentine, 4 parts; dissolve and add lampblack to bring it to the proper consistence.

(29) C. B. H. writes: A cement used for cementing leather indicates by its smell that sulphide of carbon is the solvent used. How can I ascertain whether it is the di- or bi-sulphide? A. The bisulphide and disulphide are the same. 2. How can I test the cement for oil of turpentine? A. Expose a quantity of the solution in a shallow vessel over the water bath to a temperature of 110° Fah. for some time. If turpentine oil is present it can be recognized by its odor in the residue from which the more volatile sulphide has been expelled. Carbon disulphide boils at 110° Fah., turpentine oil at 310° Fah.

(30) S. F. B. asks for a recipe for a paste or muilage for a scrap book. Ordinary muilage is too hard and stiff after it is dry.

(31) W. B. H. asks: Will you please inform me how I can expand the rubber cylinders so as to place them on the shafts of clothes wringers?

(32) H. B.—The total eclipse of 1869 took place on the 7th day of August.

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

S. B.—The bituminous substance closely resembles grahamite—an inspissated and oxygenated petroleum. Am. J. Sci. II., xlii, 420, 1866.—A. W. C.—Mica (muscovite) is usually cut in about 100 numbers, the sheets varying in size from 2 x 2 to about 8 x 12 inches, and the prices (for clear and perfect sheets) from 50 cents to \$6 per hundred sheets.—E. H. P.—Hematite of fair quality. An assay would be requisite to determine its precise value.

HINTS TO CORRESPONDENTS.

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.

Many of our correspondents make inquiries which cannot properly be answered in these columns. Such inquiries, if signed by initials only, are liable to be cast into the waste basket.

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.

COMMUNICATIONS RECEIVED.

The Editor of the SCIENTIFIC AMERICAN acknowledges with much pleasure the receipt of original papers and contributions on the following subjects: Light as a Motive Power. By F. E. G. M. Variable Velocity. By J. T. O.

[OFFICIAL.]

INDEX OF INVENTIONS FOR WHICH Letters Patent of the United States were Granted in the Week Ending June 25, 1878,

AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

A complete copy of any patent in the annexed list, including both the specifications and drawings, will be furnished from this office for one dollar. In ordering, please state the number and date of the patent desired, and remit to Munn & Co., 37 Park Row, New York city.

Table listing inventions such as Amalgamator, Anchor for check row cords, Atomizer, Auger, Axle car, Baker and roaster, Baler, Barrel heads and covers, fastening, Basket, Bed bottom, Beehive, Beehive, Beehive, Beehive, Belt shipper, Bit stock, Blood making articles from, Bobbin, Bolter covering, Bolter heads, Bolters, Bonbon wrapper, Book copy, Boot and shoe counters, Bottle stopper, Box fastener, Box packing, Box, wooden, Boxes, fastening packing, Boxes, etc., device for packing, Braided, Braided, holding coils, Brack, automatic wagon, Broom, Brush, Bucket, Burglar alarm, Burlap sack, Button tub, Buttoneer and button fastener, Calipers, Can, butter, Car coupling, Car coupling, Car, open railway, Car, street, Carburetor, Carding machines, Carpet stretcher and fastener, Cartridge holder, Casting door and knobs, Celluloid and other compositions.

Table listing inventions such as Cement, manufacture of hydraulic, Chair barber's, Change gate, Churn, Cigar bundler and binder, Cigar package, Cigarette, Clasp, Cleansing and scouring device, Cloth drying machine, Cloth finishing machine, Clothes boiler, Cock, reverse way, Coffee, compound for coating roasted, Coin holding and delivering device, Comb, M. Butron, Cooker, feed, C. Gorton, Cooker, feed, J. A. Peirron, Cooler, milk, Peck & Ball, Cooling and freezing apparatus, Corn dropper, Cultivator, wheel, Curtain cord tightener, Cutter, blank for, A. B. Pedder, Cutting instrument or tool, Dental pluggers, motor for, Ditcher, C. B. Stough, Doll, M. M. Steuber, Draw gage, Drill, grain, Dyeing apparatus, Ear piercer, Eggs, treating preserved, Electric circuit, vibrations in an, Electric lighting system, Electric lights, regulator for, Engine, reciprocating, Engine, steam, Engine, wind, Etching on glass, Faucet, Beausolle & Moreau, Faucet for compartment vessels, Feather renovator, Feed cutter, Fence, O. A. Clark, Fence, S. Craig, Fence, J. Hallner, Fence post, Fire arm, breech-loading, Fire arm, breech-loading, Firearm's belt hook, Fork, horse hay, Friction clutch, Fruit picker, Furnace, blast, Furnace door, Furnaces, air distributing pipe, Furnaces, feeding fuel to, Gas meter prover, Gate, farm, E. F. H. Romans, Gate, farm, J. E. Strong, Gate operating mechanism, Grain binder, Grinding machine, Guns, carriage for machine, Harrow, Pentreath & Crosby, Harrow tooth, Harrow, wheel, Harvester, J. Bordwell, Harvester, J. M. Rotherauf, Harvester, C. Whitney, Harvester, platform, G. Sweet, Harvester rake, Hat finishing machine, Hatchway doors, opening and closing, Hay tedder, Heater, D. Sullivan, Hoes, forming the eyes of, Hog cholera compound, Horse collar, Horse collar, S. M. Palmer, Horse detaching device, Horseshoe, O. Von Ruville, Horseshoe blanks, manufacturing, Horseshoe blanks, rolling, Horseshoe nail machine, Horseshoe nails, making, Hose attachment, Hose pipe nozzle, Hub, vehicle, Ice locomotive, Ice tool, Ingots, treating cast steel, Insecticide compound, Jar holder, Jewelry, scrollwork for, Journal bearing, Kilt suit, Knitting machines, Knitting machines, stopping mech. for, Lamp, H. P. Nichols, Lamp bracket, Lamp or lantern, Lamp or lantern, Lamp reflector, Lamp socket and stand, Latch, gate, Latch, reversible, Leather, tramping drum in manuf., Lightning rod coupling, Link bending machine, Liquors, favoring, Lock, time, Locomotive, road, Loom picker, Loom stopping mechanism, Loom take up, Lubricator, vehicle axle, Mangle, H. Albers, Marble, artificial, Matchbox, Mechanical movement, Milk and provision rack, Mill, disintegrating, Mill, grinding, Mirror for exhibiting samples, Motion mechanism for transmitting, Mucilage bottle stopper, Musical notation, Newspaper folding machine, Nut lock, Nut lock, Oatmeal machine, Oil cloth making, Oils, apparatus for refining fat, Organ, reed, Organ, reed, W. O. Trowbridge, Ozone generator, Packing, steam, Padlock, W. Bohannon, Padlock, J. W. Gable, Paper, etc., reducing wood to pulp for, Pen, fountain, C. Stockman, Pen, pneumatic, Pen, fountain, C. Stockman, Pessary, J. W. Dawson, Piano stool, Bramble & Deihl, Picture frame, Pile driver, Planing machine, box, Planing machine, wood, Planter, check row corn, Planter, seed, R. L. Cleveland, Plow, N. P. Bowsber, Plow, R. W. 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