

RECENTLY PATENTED INVENTIONS.

Engineering.

FILLING BLAST FURNACES.—Thomas F. Witherbee, Port Henry, N. Y. This inventor has devised an improved charging apparatus...

COAL CHUTE REGULATOR.—John F. Schmadeke, Brooklyn, N. Y. This is an apparatus adapted to operate automatically in connection with the usual elevator...

Railway Appliances.

CAR COUPLING.—John Cochran, Jr., Collins, Mo. According to this invention, swinging balls are arranged, one in rear of the other...

Mechanical.

SAW HANDLE.—Azell B. Van Campen, Raymond, Cal. This is an adjustable handle for long saws, such as are used for cutting up logs...

METALLIC PACKING.—Frederick A. Ives, Grant's Pass, Oregon. The proper packing of piston rods, valve stems, etc., is the more especial object of this invention...

SEWING MACHINE NEEDLE BAR.—Henry A. Dodge, Boston, and William T. Richards, Newton, Mass. This invention provides the face plate with gibs so arranged as to effectually take up the wear...

STONE CARVING MACHINE.—Antonio Zanardo, New York City. In this machine a table has movement in a bed and a tool carriage is held to revolve upon the table...

Agricultural.

MOWING MACHINE ATTACHMENT.—William L. Hay and Robert L. Johnston, Franklin, Tenn. This is a gathering attachment comprising side supports detachably secured on the sickle portion of the mower...

Miscellaneous.

HOUSE MAIL BOX.—Edwin F. Kinsey, Washington, D. C. This box is to be attached near the front door of a building, and is so arranged as to indicate to the carrier when mail is deposited...

SOLDIER'S FIELD EQUIPMENT.—George H. Palmer, U. S. Army. This invention comprises a half shelter canvas tent, to be united with a like half shelter tent, and carried by being placed around the soldier's bedding...

uted, while the whole is so made that the wearer may easily put it on or off.

PIN FOR ATTACHING FLOWERS TO DRESSES.—Edward W. Stifel, Wheeling, West Va. This pin is made of a single piece of wire bent and twisted about itself to form a body terminating in two closed loops...

Designs.

CARPET.—William F. Brown, Newark, N. J. The body of this design is decorated with flowers of the rose and daisy type, with foliage in festoon arrangement...

HANDLE FOR SPOONS, ETC.—Charles Osborne, New York City. A foliated figure at the top of this handle represents centrally a cluster of grapes.

NOTE.—Copies of any of the above patents will be furnished by Munn & Co., for 25 cents each. Please send name of the patentee, title of invention, and date of this paper.

SCIENTIFIC AMERICAN BUILDING EDITION.

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TABLE OF CONTENTS.

- 1. Elegant plate in colors showing a handsome residence recently erected for William H. Bartlett, Esq., at Evanston, Ill. Two perspective views and floor plans. Mr. J. L. Silabee, architect, Chicago, Ill. A very picturesque design.
...

The Scientific American Architects and Builders Edition is issued monthly. \$2.50 a year. Single copies, 25 cents. Forty large quarto pages, equal to about two hundred ordinary book pages...

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 the following week's issue.

For pumping engines. J. S. Mundy, Newark, N. J. 'U. S.' metal polish. Indianapolis. Samples free. Wood pulp machinery. Trevor Mfg. Co., Lockport, N. Y. Microbe Killer Water Filter, McConnell Filter Co., Buffalo, N. Y.

Patent Electric Vise. What is claimed, is time saving. No turning of handle to bring jaws to the work, simply one sliding movement. Capital Mach. Tool Co., Auburn, N. Y.

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.

(6008) C. J. T. asks: I have a motor built after the Edison style, of the following dimensions: Drum armature core 6 inches long by 4 1/2 diameters...

(6009) D. S. S. asks: 1. If a bell be rung inside a vessel exhausted of air, does it create any sound within said vessel, none being heard outside of same?

(6010) E. A. S. says: One rule of mechanics is that a belt will always run to the highest point. What is the reason? A. The length of the belt edge on the high side as it is called, when shafts are not parallel...

(6011) C. M. W. writes: In supplying blast to a cupola at an altitude of 9,000 feet, where the atmosphere is so much lighter than at sea level, will a pressure of 10 ounces furnish as much oxygen to support the flame under above conditions as a similar pressure at a lower altitude...

6 3/4 ounces at the above elevation and would probably be too weak in the blast as well as in the quantity of air supplied to the cupola. You will need 15 ounces pressure.

(6012) F. A. M. asks: 1. How can I make a dry battery? A. It is best to buy them. A mixture of plaster of Paris and chloride of zinc with chloride of ammonium and water in a zinc vessel with carbon pole in center will answer.

(6013) R. E. W. asks: 1. Would cotton-covered wire (No. 36) answer nearly as well as silk-covered for a small induction coil? A. Yes. 2. I wish to make some good permanent magnets...

(6014) J. A. McN. asks: 1. How many cells Leclanche would I need to work a telephone system over about two miles of a circuit (transmitter and receiver being alike)? A. Use 4 cells. 2. Which is the best for such a line or shorter?

(6015) F. H. asks: Can you give me a table, or tell me how it is ascertained, what by different given current, length of wire, etc., will be the attraction, in ounces or pounds, toward the core of a magnet?

(6016) F. H. S. asks: Is it possible to reflect all of a ray of light from a transparent body? Will not refraction take place to some extent as long as the ray strikes the body?

(6017) L. F. D. asks: Do telephone, telegraph and electric light companies run their cables in the same conduits (under ground)? If not, why? A. Generally not, in order to avoid induction and possibility of danger from leakage.

(6018) R. asks if a good tennis court could be made out of coal ashes. If so, the method of operation and whether the ashes would require sifting. A. Ashes alone would hardly answer.

(6019) J. D. asks (1) what size wire to use to wind motor No. 759 for 25 volts, and about what power will it develop? A. Wind with No. 21 or 22 wire.

(6020) A. B. R. asks if the simple electric motor in 'Experimental Science' can be run to good advantage with the Edison-Lalande battery?

(6021) E. L. A. writes: Where can I get a history of the calendar and all its changes? What day of the week was George Washington born? And in what year? (So recorded at that time.) Was 1700 a leap year under Julian calendar? To make my meaning plain on questions 2 and 3, I will state that I have examined different encyclopedias on the calendar and find that they do not agree in this.

colonies. The historical or business year in England began on the first day of January as established by the Romans.

(6022) C. B. W. asks (1) if the motor described in SUPPLEMENT, No. 641, can be run from an alternating current.

(6023) I. R. writes: 1. Can a storage battery be charged from an alternating circuit of 50 volts?

(6024) S. J. S. asks: How does the heat from the sun penetrate through the intense cold of the upper regions, and warm the surface of this planet?

(6025) W. F. asks: 1. What per cent of power developed at power house is lost in transmitting for street car propulsion of the three following methods?

(6026) H. R. C. asks: 1. Does the induction coil increase both the tension and quantity of current or just the tension alone?

(6027) C. L. writes: I have three storage batteries, and I would like to get some idea of what power I can get from them if attached to a proper motor.

(6028) F. C. H. writes: We are putting in a steam heating plant in a large hospital. The boilers, five in number, must be situated on practically the same level as the building to be heated.

tem similar to the first named gives the most satisfactory results for both winter and summer ventilation. It partially counteracts unequal heating on different sides of the building from outside wind pressure.

(6029) W. L. B. asks: In that class of rheostats where change of resistance is caused by change of pressure on a carbon powder, is lampblack suitable for the powder?

(6030) W. W. P. asks: 1. What would be the effect if I were to wind a flat iron ring with a continuous winding instead of alternating them, and place it in the fields of the Morley alternating machine?

(6031) C. A. D. asks: Can you inform me the degree of heat necessary to transform limestone from its natural state into lime?

(6032) Reader writes: A says that a black overcoat is warmer than a light colored one of equal weight, because the dark colored cloth absorbs the rays of light, while the light colored reflects them.

(6033) M. M. asks: What is the ratio of the volume of high pressure cylinder to that of the intermediate pressure cylinder in a triple expansion engine, also the ratio of the intermediate to the low pressure cylinder?

(6034) Inquirer, Newfoundland, asks: 1. Would an ordinary kerosene lamp, with a sheet iron drum placed just upon its chimney so that the heat from it may radiate slowly through the apartment, heat the apartment better than the lamp without the above attachment?

(6035) P. S., N. O., asks: What horse power will a gasoline engine having two cylinders 4 1/2 x 6 inches stroke give at 350 revolutions? What speed will above engine drive a 21 feet long, 5 feet 6 inches beam boat, propeller 18 inches, 3 blades, 4 1/2 feet pitch?

(6036) R. W. S. asks if the valve of a high speed locomotive has to be changed to a shorter throw when running at a high rate?

TO INVENTORS. An experience of forty-four years, and the preparation of more than one hundred thousand applications for patents at home and abroad, enable us to understand the law of both countries, and to possess an unequalled facility for procuring patents everywhere.

INDEX OF INVENTIONS For which Letters Patent of the United States were Granted

May 1, 1894, AND EACH BEARING THAT DATE.

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

Table listing inventions such as Acid apparatus for charging liquids with carbonic acid, Animal liberating device, Bag and twine holder, Bag covering, Bale cutter and feeder, Band cutter and feeder, Barrels to stocks, detachably securing, L. L. Heppner, Basin, wash, J. F. Lamping, Bar and twine holder, R. J. Morton, Battery system, J. Trumphy, Bed, folding metal, A. D. Houston, Bed sofa, E. Sodergren, Bedstead attachment, E. Brule, Beer apparatus for pasteurizing and racking off, Muller & Glesen, Beer with carbonic acid, impregnating, J. F. Theurer, Bicycle, C. E. Ford, Bicycle, E. J. O'Connor, Bicycle bag, B. Elliott, Bicycle chain adjustment, M. L. Wilcox, Bicycle gearing, W. L. Shults, Bicycle stand or holder, R. De Clairmont, Bit, See Bridle bit, Bit stock, F. J. Colvin, Blower, powder, R. E. Warner, Boiler, See Heating boiler. Sectional boiler. Vertical glass boiler, Boiler, H. H. Berry, Boiler, C. D. Dillard, Boiler, C. S. Hopkins, Boiler, C. W. Scott, Jr., Boiler furnace, steam, J. McMillan, Boiler tube cleaner, M. C. Henley, Boiler tube expander, H. Strecker, Boiler tube expander and stopper, J. Wat on, Bolt, See Bolt-acting bolt, Boot protector, lady's, H. J. Westcott, Boot, soaking, M. N. Rogers, Bottle, mullage, E. Terry, Bottle or jar closure, R. M. Howe, Bottling machine, M. P. Heddy, Box, See Cigar box. Mail box. Paper box, Car and motor, H. A. Hayden, Bridle bit, Sego & Faucher, Bridle bit, T. D. Gordon, Brush, fountain marking, R. G. Bailey, Buckle, J. A. King, Bung extracting machine, J. D. Kraft, Burglar alarm, H. A. Moore, Burlap apparatus, E. Whitney, Camera shutter, L. F. Eiden, Can, See Oil can, Can filling apparatus, G. H. Perkins, Can filling machine, A. J. Tanner, Car coupling, H. Bridge, Car coupling, F. C. Brown, Car coupling, J. Coup, Car coupling, J. E. Smith, Car coupling, H. D. Nolley, Car coupling, Reynolds & Jones, Car coupling, C. H. Smith, Car coupling, Wolcott & O'Hara, Car dumping apparatus, P. H. Hagenev, Car fender, S. C. Kilduff, Car platform, J. Krubbe, Car safety guard, street, S. Norton, Car switch actuator, street, F. Spading, Car wheel guard or fender, J. F. Morton, Car, curtain rod fixture for sleeping, J. Kirby, Jr., Chair, See Dental chair, Check book, P. Cavalier, Cheese forming machine, H. R. Van Eyck, Cigar box, L. Rosenfeld, Cigar press, Schuppel & Hubeler, Cistern cleaning machine, J. Shepherd, Clasp, P. James, Clay looms, machine for manu acturing, W. G. O'Neil, Cloth reeling machine, W. A. Richardson, Cloth sising and drying machine, R. Partington, Clothes drier, Douglas & Austin, Clutch, automatic stop, A. C. Campbell, Coffee pot and filter, C. H. Huxford, Comb, H. A. Hayden, Commutator brush, B. Keraberg, Converter, C. M. Allen, Converter for smelting ores, C. M. Allen, Copper from its ores, extracting, G. W. Goetz, Copy holder, E. Sheldon, Core making machine, C. E. Schmidt, Cotter, R. W. White, Coupling, See Car coupling, Cracker cutter, Rockwell & Hull, Creamer, centrifugal, O. Ohlsson, Crusher, See Ore crusher, Cultivator and d planter, J. E. Miller, Curved beam, F. P. Craig, Curtain fixture, J. Williams, Cutter, See Band cutter. Cra ker cutter. Vegetable cutter, Cutting machine, Wilson & Hesch, Jr., Cutting off tool, E. W. McInrd, Dairy, portable, J. H. Gilvev, Dental chair, T. H. & E. Gardner, Dental chair, T. H. & E. Gardner, Dish, butter, E. Hill, Dish cleaner, F. Noble, Disinfecting apparatus, Stratton & Murdoch (r), Distilling apparatus, A. Lavy, Dough shaping machine, F. Dubrop, Drier, See Clothes drier, Drill for wells, etc., C. E. Wyman, Drying kiln, C. H. Seaman, Dye, blue alizarine, R. Bohn, Dye, brown, petroleum, H. A. Frasch, Dye, brown, petroleum nitro, H. A. Frasch, Dye, purple, H. A. Frasch, Electric conductor for underground conduits, D. E. Conner, Electric elevator, F. E. Herdman, Electric generator, W. Baxter, Jr., Electric generator, self-exciting constant potential, Schmid & Lamme, Electric motor, S. B. Jenkins, Electric machine, dynamo, Forbe, Electric machinery, construction of solenoids or coils of wire used in, G. Forbe, Electric motor, F. E. Herdman, Electric motor, Ries & Scott, Electric motor controlling apparatus, F. E. Herdman, Electric motor controlling device, F. E. Herdman, Electric motor or generator, W. Baxter, Jr., Electric motor regulator, F. E. Herdman, Electrical distribution system of, E. Thomson, Elevating and bag holding machine, portable, G. S. Noble, Elevator, See Electric elevator. Hay elevator, Elevator, F. E. Herdman, Elevator, G. Quackenbush, Elevator controlling device, F. E. Herdman, Elevator for buildings, C. I. Hall, Elevator safety gate, W. J. Snyder, Engine, portable, steam engine, Steam engine, P. Chouteau, Engine tender, road, E. T. Wright, Envelope, A. J. Ritter, Evaporating pan, H. F. Miller, Excelsior cutting machine, C. H. Whitman, Exercising machine, G. F. Poole, Exhibiting machine, coin-controlled card, McFarland & Reid, Fan, sewing machine, J. F. Billman, Faucet, M. E. Spoford,

Table listing inventions such as Fence winding device, wire, I. V. Adair, Fences, implement for weaving filler wires in wire, L. A. Greeley, Fender, See Car fender, Filter, See Oil filter, Fire alarm and signal, automatic electric, L. A. & C. J. Werner, Firearm, recoil operated, P. Darche, Fire escape truck, E. Cardarelli, Folder for fabrics, edge, Mitchell & Murphy, Folding gate, swinging, G. M. Beard, Folding and raising gate, Car platform gate, Electric elevator, folding gate, Folding gate, Electric generator, electro-magnetic variable speed, W. Beaumont, Generator, See Electric generator. Steam generator, Glass door plate, H. W. Greene, Glass panels, manufacture of stained, H. C. Hughes, Glassware moulding apparatus, C. Grebe, Globe, geographical, I. & M. A. Hodgson, Glove, etc., H. L. Northrop, Gold and black sand, apparatus for extracting, S. G. Dorr, Grate or burner holder, R. W. Coker, Grinding mill, roller, Eudwald & Beary, Guns, locking mechanism for breakdown, F. A. Hollenbeck, Hair curler, J. W. Leonard, Hammer frame, folding, A. Karnbach, Handle, See Knife handle. Razor handle, Handles and supports to vessels, attaching, G. W. Niedringhaus, Harness, L. H. Creamer, Harvester, W. D. Harmon, Hat and coat hook, locking, E. W. Sweigard, Hat brim stiffening machine, F. J. Murphy, Hat or bonnet holder, J. D. Van Gorder, Hatch, elevator, Blanchard & Lambie, Hay elevator and carrier, J. E. Porter, Hay knife, Feneran & Milks, Hay press, W. J. Pearce, Hay rake, G. A. Gemmer, Hay rake, automatic center delivery, E. H. & O. N. Kimball, Heater, See Electric heater, Heater for soldering irons, etc., G. H. Perkins, Heating boiler, hot water, D. F. Morgan, Heel nailing machine, A. White, Hinge, school seat, J. W. Fisher, Hinges, manufacture of strap, T. Corscaden, Hinges, roller, machine for forming wire, H. S. Reynolds, Hoisting apparatus, W. Both, Hook, See Check hook. Hat and coat hook, Hose bridge, H. Sandrock, Hose nozzles, portable and adjustable support for, W. A. Cain, Hot air furnace, G. W. Fridrich, Hub protector, vehicle, N. D. Hodgkin, Incubator, H. B. Davis, Indicator springs and steam gauges, apparatus for testing, R. C. Carpenter, Ink, manufacture of printing, J. & J. Bibby, Insulating material into conduits, means for introducing, G. J. O'Connell, Jewel setting machine feeder, W. Ronquist, Kiln, See Drying kiln, Knife, See Hay knife, Knife, R. J. Christy, Knife handle, brush back, etc., F. N. Look, Knitting machine, circular, Branson & Cook, Lace, See Lace machine, Ladder for sleeping cars, folding, J. B. Holbrook, Ladder, sectional, H. H. Lang, Lamp, electric arc, J. C. Fyfe, Lamp, electric arc, J. B. McKewen, Lamp, incandescent electric, F. S. Smith, Lantern, Gill & Atwood, Lathe, See Lathe machine, Last, J. C. Kupferle, Latch and lock, combined, N. B. Gregory, Lathe, turret, F. H. Richards, Laundry hanging rod, W. S. Coburn, Leather skiving machine, N. D. Fresne, Life-preserver, buoy, etc., automatic, A. Colomes, Lignin separator, centrifugal, J. J. Jones, Lubricator for bicycle chains and bearings, W. L. Sargent, Lubricating device for car or other axles or shafts, J. S. Washburn, Lubricator, P. S. Whiting, Magnet for electric machines, field, A. Schmid, Mail box, See Mail box, Mailer, machine, J. C. Horton, Malt liquors, apparatus for cooling and aerating, H. E. Deckebach, Match making machine, J. C. Donnelly, Match safe, R. D. Goodlett, Mattress filling machine, W. H. Putnam, Measuring dress skirts, device for, A. S. Newcomb, Measuring implement, tailor's, D. Hawley, Measuring textile fabrics, apparatus for, F. C. Stephan, Meat chopping machine, A. J. Kull, Metal, machine for joining and rolling sheets of, L. H. Jackson, Metal, machine, J. C. Horton, Meter, See Grain meter, Mill, See Grinding mill, Mould making machine, L. Ribereau y Marteaux, Moulder's tack, F. Schulte, Mop wringer, W. H. Bennett, Motion, device for converting reciprocating into rotary, J. Jackson, Motor, See Electric motor, Motors, hydraulic apparatus for controlling fluid pressure, C. Bonjour, Mower, R. McGabe, Mower, lawn, H. Deck, Musical rest, J. W. Darley, Jr., Musical instruments, transposing keyboard for, M. Phillips, Musical instruments, vibrator forreed, H. James, Nail puller, G. J. Capewell, Necktie shield, I. Noar, Nut and bolt lock, I. G. Tinney, Nut lock, T. McDonald, Jr., Oil can, J. H. Hall, Ordnance, breech-loading, J. H. Althof, Ore crusher, F. Bishop, Organ pipe, P. Wirsching, Pall attachment, F. M. Buck, Pan, See Evaporating pan, Paper cutting machine, J. Spencer, Paper box, A. Reeves, Jr., Paper fixture, toilet, S. Wheeler, Paper vessels, machine for making, W. Fogle-son, Pen, drawing, Haug & Holler, Piano action, W. Wallace, Pianofortes, self-playing attachment for, T. L. Leitch, Pie rack, folding, T. J. Shannon, Pigments, manu acturing, G. E. Moore, Pipe, See Tobacco pipe, Pipe fastener, conductor, J. H. Eller, Pipe threading and cutting-off machine, A. W. Cash, Pipe wrench, Geisendorfer, Planter, J. E. Bam, Planter, J. N. Wilson, Planter, corn, J. & J. Kurt, Plaster, manufacture of, H. C. Higginson, Plate holder, magazine, A. Stegemann, Plow, J. D. Burkhardt et al., Portable engine, W. I. Castleman, Pot, See Coffee pot, Power wheel, A. Blenkowal, Precious ores, converting and smelting, C. M. Allen, Press, See Cigar press. Cotton press. Hay press. Toggie press, Press, and apparatus therefor, hardening, H. A. Brubaker, Puller, See Stump puller, Pump, W. H. Fetters, Pump for compressing air or gases, Ballis & Morcom, Pump, lift, J. Wook, Pump, pipe, self-attachment for, L. Adams, Pump, steam, E. C. Johnson, Punch, metal, T. E. Clark, Pyrotechnic device, H. J. Pain, Rack, See Pie rack, Railway conductor support, electric, J. C. Henry, Railway, electric, W. B. Purvis, Railway switching, C. Benagh, Railway switch, C. Froelich, Railway trolley, electric, G. W. Hooper, Bake, See Hay rake,