

[OFFICIAL.]

INDEX OF INVENTIONS

FOR WHICH

Letters Patent of the United States were Granted in the Week Ending

October 1, 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 with patent numbers and names, including Alumina, making sulphate of, F. Laur; Amalgamator, C. P. Bowen; Augers, manufacture of, W. Tucker; Axles, straightening car, J. A. Hodel; Barrel cover, Comly & Brown; Battery, galvanic, G. Lauder; Bed bottom, N. T. Hamilton; Belt fastener, G. L. Zimmer; Bit brace, E. C. Merfman; Boiler, locomotive, D. Sullivan; Boilers, water heater for, J. A. McCormick; Boot and shoe counter support, W. H. Koopman; Boot and shoe stiffeners, shaper for, J. R. Moffitt; Boot and shoe heel trimmer, Van Nohuys & King; Bottle stopper, S. Oakman; Bottle stopper, W. G. Steinmetz; Bottle stopper cages, mould for, H. Wright; Box loop, J. Watters; Box opener, J. H. Giese; Boxes and trays, making, S. H. Wright; Brake, steam or air, M. Wood; Bran, treating, J. T. Shanton; Brick for annealing furnaces, fire, C. H. Morgan; Brick maker and presser, J. K. Caldwell; Bung, W. J. Stevens; Capsules, cutting of gelatine, F. A. Hubel (r); Car coupling, L. Brown; Car dumping, L. Prince; Car ventilator window, E. Robinson; Chain links, bender for, Conway & Heald; Chair, rocking, A. Morris; Churn d sher, M. F. Mitchell; Churn, rotary, J. T. Fry; Cigar box, M. Jonas; Clock case, M. Bock; Clock, illuminated, C. Maynard; Clutch, H. A. Remington; Coin holder, W. H. Craig; Cooker, food, I. E. Bendickson; Corset, Birge & Skidmore; Corset, D. H. Fanning; Corset clasp, E. J. Love; Cotton gin saw cleaner, J. C. Drake; Cultivator, W. H. Dickey; Doffer comb for carding engines, J. Hibbert; Door alarm, C. J. Elliott; Drill attachment, grain, B. Town; Drill, seed, Hildrup & Tschop; Drill tooth attachment, S. Frank; Engine, etc. rotary, Bartrum & Powell; Engine, rotary, J. Butcher; Evaporator, F. Michael; Evaporator, porous, W. Galloway; Exercising machine, J. G. Nicolay; Faucet, self-measuring, E. L. Spencer; Feather renovator, C. G. Barnd; Feeding stock, device for, O. J. Smith; Fence wire, barbed, A. L. Pitney; Fertilizer, C. Richardson; File, paper, A. Childs; Filter, water, H. J. Ennis; Firearms, reflector attachment to, J. McGuigan; Fire escape, F. B. Fuchs; Fireplace hood, H. Clayton; Fish hook, baited, J. Falvey; Fishing rod, H. Van Altena; Flour and grain conveyer, F. Kruse; Fork and pruning shears, hay, B. C. Chambers; Furnace, bagasse, W. Littlejohn; Furnace, glass, W. Leighton, Jr.; Game table, C. F. A. Reesch; Gas governor, F. G. Johnson; Gas, making illuminating, J. Shackleton; Gas works, center seal for, Smith & Farmer; Glass, etc., ornamenting, C. Fontayne; Glass vessel, incased, D. W. Norris; Gloves, surgical, making, T. Forster; Gold, saving float, J. J. Muller; Governor for pumping engines, E. L. Otis; Grader and ditcher, C. C. Skinner; Grinder and mixer for pasty substances, A. Beyer; Harness, A. Rittenhouse; Harness suspender, Marquardt Jr. & Getzenderer; Harness loop, metallic, L. C. Quinby; Harvester, R. Campbell; Hat former, feeder for, P. Starr; Headlight, locomotive, L. A. Wood; Heating and ventilating buildings, W. E. Prall; Hinge, lock, R. Phipps; Hog cholera compound, T. Arnold; Hog cholera compound, G. S. Williams; Hobby horse, P. Marqua; Honeycomb foundation, J. E. Hetherington; Horse collar, G. A. De Zeng; Hubs, roller for wagon, J. Kritch (r); Indicator, station, A. West; Ingot mould, W. R. Jones; Inkstand, W. A. Hull (r); Iron from phosphorus, Schulze-Berke & Barnstorf; Ironing machine, H. E. Smith; Journal bearing composition, J. Johnson; Key seat or pinion cutter, J. W. Post; Knife and measuring rule, Waldman & Frank; Knife, carrier's, Hansen & Weiffenbach; Lamp burner, T. G. Springer; Last, J. E. Chenette; Lathe carriage, J. W. See; Lathes for cutting rubber, etc., J. B. Candy; Lathe, gear cutter, J. W. Post; Leather from sheep's stomachs, E. Tivet; Life boat, C. Dickenson; Lime gas, to produce caustic, A. W. Wilkenson; Lock, satchel, W. Roemer; Mill, cider, J. Bowen (r); Mill, feed grinding, Brigham & Shaw; Motor, D. Ford; Oatmeal machine, C. Bailey; Organ pedal, J. R. Lomas; Ovens, damper for bakers, F. Schwab; Padlock, M. Jacobs; Paper and paper pulp, W. E. Farrell

Table listing inventions with patent numbers and names, including Pencil clasp, A. Christey; Pencil clasp, W. A. Scollay; Pendulum regulator, F. J. Martins; Percussion primer, J. Gardner; Photographic printing frame, G. F. E. Pearsall; Pipe coupling or leak stopper, A. J. Sweetland; Pipe cutters or wrenches, C. Fenton; Pipes, boilers, etc., covering for, J. A. Maloney; Pitcher, sirup, H. B. Beach; Pitman joint, J. Conley; Planing machine, Goodrich & Colburn (r); Planter and guano distributor, J. C. Williams; Planter, corn, C. & F. Wyson; Plow clevis, W. Masters; Plow stock, V. R. Davis; Press, hay, I. R. Kulp; Pump, ship's, S. C. Loud; Pumps, link for chain, S. W. Kershner; Pumps, etc., metallic bucket for, S. W. Kershner; Pumps, suction pipe for, E. O. Leermo; Quilting frame, B. Elliott; Railways, lessening noise on, N. Kenny; Railways, signal for, P. E. Le Boulenge; Reflector, S. P. Kase; Rubber for dental uses, packing, E. R. Mullett; Ruling machines, device for, W. Handy; Sash cord fastener, S. J. Joyce; Saw, drag, W. W. Giles; Saw handle, crosscut, H. Barron; Scarf, C. C. & D. W. Noyes; Scissors, G. Conover; Scow, reversible dumping, C. C. Overton; Seams, opening and pressing, J. T. Bruen; Seeder and planter, J. E. Morgan; Seeding machine, W. K. Evans; Seeding machine, J. P. Fulgham; Seeding machine, force feed, Van Brunt & Davis; Sewing machines, trimmer for, J. I. & H. Pellerin; Sifter, flour and meal, F. G. Ford; Silk, machine for beating, J. Weidmann; Skate, roller, J. H. Bowen; Skins, preparing gray squirrel, H. Breisacher; Skiving machine, Dancel & Smith; Sled, logging, J. Conruff; Spinning machine for covering yarn, W. McVilia; Spring, wagon seat, W. D. Baker; Stalk chopper, J. B. Baird; Stamp gumming apparatus, J. F. Seymour; Steam trap, L. P. Hawes; Steam trap, J. L. Parry; Stitch ripper, J. F. Budlong; Stone, preparing artificial, J. A. Mehling; Stove blast apparatus, J. Waldron; Stove lid, S. F. White; Stove, parlor, G. G. Wolfe; Straw and feed cutter, D. K. Burkholder; Sugar machines, hopper for, Jasper & Boushey; Sugar, m king cube, W. Jasper; Table, P. Pleines; Table and life preserver, H. M. Green; Tablet, writing, W. E. O'Bryon; Telegraph printing, G. M. Phelps; Telegraphs, resistance for electric, J. Muirhead, Jr.; Telephone switch, C. A. Cheever; Thermometer, E. C. Clark; Thill coupling, Chapman & King; Tobacco pipe, W. Heyenga; Tobacco pipe cover, W. Heyenga; Toy, E. M. Shirley; Toy balloon, W. C. Schwartz; Truck, farm, D. Smith; Truck, stove, W. H. Tucker; Tubing, well, N. K. Ludlow; Tug, spring draught, J. F. Miller; Tuyere and blast deflector, C. T. Clark; Urn, hot water, N. Kenny; Valve yokes, forming, J. A. Hodel; Vehicle sand band, Winchell & Hauser; Vehicle top, adjustable, A. Bowers; Ventilating vault light, J. M. Willbur; Ventilator, W. D. Young; Wagon running gear, J. B. Nichols; Wash board, R. W. Harper; Washing machine, J. F. Tridle; Washing machine boiler, Houck & Gardner; Watch pendant, W. D. McGlochon; Weatherstrip, E. Conklin; Wells, boring oil, Asper & Magill; Wells, casing for oil, G. Koch; Wells, windlass for oil, W. & G. Koch; Wheel, car, R. S. Semple; Wheel for elevated railways, M. V. B. Ethridge; Wood, preserving, A. B. Tripler; Wool burring machine, J. K. Proctor

Table listing inventions with patent numbers and names, including All kinds of starch, F. S. Waters; Baking powder, C. E. Andrews & Co.; Cheating tobacco, etc., G. W. Gall & Ax; Cigars, Liebes Brothers & Co.; Cigars, J. Schuewind; Cigars, etc., S. Ottenberg & Bros.; Cigars cigarettes etc., Blaskopf & Brown; Concentrated preparations, D. St. Amant & Son; Cotton goods, Smith, Churchill & Scribner; Coughsyrup, Williams & Moore; Hair tonics, W. E. Jervy; Illuminating oils, Yates & Co.; Liniments, Orebaugh & Gardner; Medical compound, Cousens & Tabler; Medicinal preparations, M. Palen; Medicinal preparations, C. White; Medicinal preparations, E. D. Pape; Smoking tobacco, G. W. Gall & Ax; Snuff, etc., G. W. Gall & Ax; Weighing scales, E. & T. Fairbanks & Co.

Table listing inventions with patent numbers and names, including Carpeting, R. Allen; Carpeting, E. Petit; Chandeliers, T. R. Davis; Cigar boxes, S. Belmont; Clock fronts, H. R. Frisbie; Crocheted hood, E. M. Ackerman; Ornamental trimming for jewelry, A. E. Codding; Rubber boots, J. Banigan; Stoves, A. T. Bennett; Toy money box, A. E. Taylor

Table listing inventions with patent numbers and names, including Boot heels, F. Richardson, Providence, R. I.; Boot lasts, W. Y. Edwards, Brooklyn, N. Y.; Frying pans, J. E. Bardell et al., N. Y. City; Looms, N. Y. Silk Manf. Co., N. Y. City; Loom temples, J. B. Stamour et al., Philadelphia, Pa.; Lubricating compounds, G. G. Munger, N. Y. City; Napkin ring holder, P. E. Faber, N. Y. City; Packing lard, N. K. Fairbank et al., Chicago, Ill.; Paperfolding machinery, G. Lauder, Pittsburg, Pa.

Pedometers.—B. S. Church, Scarborough, N. Y. Sand moulds.—W. Aiken et al., Louisville, Ky. Screw propeller.—S. T. Swasey, N. Y. City. Shuttle motions.—N. Y. Silk Manf. Co., N. Y. City. Ship's berth.—H. Smith, Boston, Mass. Skin measuring machine.—D. T. Winter, Washington, D.C. Telephone.—G. M. Phelps, N. Y. City. Valves and cocks.—J. Powell, Cincinnati, O.

PRUNING OF NEWLY-SET FRUIT Trees, with Careful Instructions for Cutting Back, etc., with 3 illustrations. Additional information on new Vegetables, Orchard Culture, etc. Contained in SCIENTIFIC AMERICAN SUPPLEMENT No. 109. Price 10 cents. To be had at this office and of all newsdealers.

EXPLOSIVE DUST. A COMPREHENSIVE description of the Dangers from Dust in various Manufactures and the Cause of many Fires. How combustible substances can explode. Spontaneous Combustion of Iron, Charcoal, and Lampblack in Air. Flour Dust and Brewery Dust Explosions. Explosions of Coal Dust in Mines. Contained in SCIENTIFIC AMERICAN SUPPLEMENT No. 125. Price 10 cents. To be had at this office and of all newsdealers.

NEW PATENT LAW FOR Spain, Cuba, Porto Rico, etc.

By the terms of the New Patent Law of Spain, which has lately gone into operation, the citizens of the United States may obtain Spanish Patents on very favorable conditions. The Spanish Patent covers SPAIN, and all the Spanish Colonies, including CUBA, Porto Rico, the Philippine Islands, etc. Total cost of obtaining the Patent, \$100. Duration of the Patent, 20 years, 10 years, and 5 years, as follows: The Spanish Patent, if applied for by the original inventor before his American patent is actually issued, will run for 20 years. Total cost of the patent, \$100. It covers Spain, Cuba, etc. The Spanish Patent, if applied for by the original inventor not more than two years after the American patent has been issued, will run for 10 years. Total cost of patent, \$100. Covers Spain, Cuba, etc. A Spanish Patent of Introduction, good for 5 years, can be taken by any person, whether inventor or merely introducer. Cost of such patent, \$100. Covers Spain, Cuba, and all the Spanish dominions. In order to facilitate the transaction of our business in obtaining Spanish Patents, we have established a special agency at No. 4 Soldado, Madrid. Further particulars, with Synopsis of Foreign Patents, Costs, etc., furnished gratis.

MUNN & CO., Solicitors of American and Foreign Patents, Proprietors of the SCIENTIFIC AMERICAN, 37 PARK ROW, NEW YORK.



CAVEATS, COPYRIGHTS, TRADE MARKS, ETC.

Messrs. Munn & Co., in connection with the publication of the SCIENTIFIC AMERICAN, continue to examine Improvements, and to act as Solicitors of Patents for Inventors. In this line of business they have had over THIRTY YEARS' EXPERIENCE, and now have unequalled facilities for the preparation of Patent Drawings, Specifications, and the Prosecution of Applications for Patents in the United States, Canada, and Foreign Countries. Messrs. Munn & Co. also attend to the preparation of Caveats, Trade Mark Regulations, Copyrights for Books, Labels, Reissues, Assignments, and Reports on Infringements of Patents. All business intrusted to them is done with special care and promptness, on very moderate terms. We send free of charge, on application, a pamphlet containing further information about Patents and how to procure them; directions concerning Trade Marks, Copyrights, Designs, Patents, Appeals, Reissues, Infringements, Assignments, Rejected Cases, Appeals, Appeals on the Sale of Patents, etc. Foreign Patents.—We also send, free of charge, a Synopsis of Foreign Patent Laws, showing the cost and method of securing patents in all the principal countries of the world. American inventors should bear in mind that, as a general rule, any invention that is valuable to the patentee in this country is worth equally as much in England and some other foreign countries. Five patents—embracing Canadian, English, German, French, and Belgian—will secure to an inventor the exclusive monopoly to his discovery among about ONE HUNDRED AND FIFTY MILLIONS of the most intelligent people in the world. The facilities of business and steam communication are such that patents can be obtained abroad by our citizens almost as easily as at home. The expense to apply for an English patent is \$75; German, \$100; French, \$100; Belgian, \$100; Canadian, \$50. Copies of Patents.—Persons desiring any patent issued from 1836 to November 26, 1877, can be supplied with official copies at reasonable cost, the price depending upon the extent of drawings and length of specifications. Any patent issued since November 27, 1867, at which time the Patent Office commenced printing the drawings and specifications, may be had by remitting to this office \$1. A copy of the claims of any patent issued since 1836 will be furnished for \$1. When ordering copies, please remit for the same as above, and state name of patentee, title of invention, and date of patent. A pamphlet, containing full directions for obtaining United States patents sent free. A handsomely bound Reference Book, gilt edges, contains 140 pages and many engravings and tables important to every patentee and mechanic, and is a useful hand book of reference for everybody. Price 25 cents, mailed free. Address MUNN & CO., Publishers SCIENTIFIC AMERICAN, 37 Park Row, N. Y. BRANCH OFFICE—Corner of F and 7th Streets, Washington, D. C.

(10) H. B. asks if tubes placed inside a wood box with iron ends, and made watertight to prevent leaking, would expand when hot so as to damage the ends and cause leaking? A. If the tubes have considerable length, we think the expansion would cause a leak.

(11) C.H.F. writes: Recently while reading, a common housefly fell on my book, and after spinning around on his back a few times, remained quiet. I then observed a small bright red insect on the fly's body. It disappeared before I could capture it. Is it a fly destroyer? A. It was no doubt one of the mites common to flies.

(12) J. S. B. asks: In your paper of August 18, 1877, you give as "a test for free sulphuric acid in vinegar," methyl aniline violet. Will you state whether liquid aniline violet will detect the sulphuric acid, and if so, in what proportions must the dye and vinegar be? A. As we understand you, yes; dilute the solution with about ten volumes of pure water, and proceed as directed in the note referred to. It is better to make the solution from the dry color—1 part in 2,000 of distilled water.

(13) S. F. & J. S. A. write: 1. We have an iron wire (No. 19) about 3,400 feet in length, connecting two U magnet telephones. The wire passes underneath a telegraph wire, about three feet distant, and at right angles to it. At times we hear a clicking in the telephones of telegraphic signals, and we should like to know if this clicking is occasioned by an induced current of electricity from the telegraphic wire? A. We think so. 2. If so, will our wire be likely to weaken the telegraphic signals? We have a battery of several elements in connection with the wire working a call. A. No.

(14) S. W. asks: How many square feet of condensing surface will require in a surface condenser to condense the steam running from a one inch pipe from the boiler to the condenser at 60 lbs. pressure to the square inch? A. Allow one square foot of condensing surface for each 40 lbs. of steam to be condensed per hour.

(15) M. J. C. asks if a vacuum that is created in a low pressure engine is a pressure or a suction, or a drawing on the piston? I see 28 or 30 lbs. on the vacuum gauge, and notice that it required 28 or 30 lbs. pressure to bend the spring, so as to indicate it on the dial. A. It is a reduction of the pressure on the piston, the spring or column of mercury being moved by the pressure of the air to balance the decrease of pressure in the interior.

(16) G. M. D. asks: Is there any law that prohibits a person from running a stationary engine and boiler either in country or city, and who is the proper authority to apply to for license? A. In this city it is necessary to obtain a license from the Police Board. The local regulations in different parts of the country vary greatly. In many places no license is required.

(17) H. A. C. asks how to make a sounder for a thread telephone. A. Hang a small bell on a delicate wire spring, and connect the spring with the telephone thread by means of an auxiliary string, so that a slight pull of the telephone thread will make the bell jingle.

(18) W. S. asks: What is the best work for the young engineer and mechanic? A. Rose's "Complete Practical Machinist," and Bourne's "Catechism" and "Hand Book," will be good works with which to make a commencement.

(19) J. B.—The catamaran is not patented, but an improved steering arrangement, and a method of connecting the hulls by flexible joints, have been patented. The patent specifications are published in SUPPLEMENT 105.

(20) J. B. J. asks: 1. How to make a Bell telephone? A. See SCIENTIFIC AMERICAN SUPPLEMENT No. 142, for full directions. 2. Can I sell these telephones without infringing? A. See "Rights of Investigators," p. 128, current volume of SCIENTIFIC AMERICAN.

(21) W. J. D.—Bartol's "Marine Boilers," Burgh's "Treatise on Boilers," and Wilson's "Treatise on Steam Boilers," may answer your purpose.

(22) E. G. M. asks: Can an electro magnetic engine be made powerful enough to propel a boat 20 feet long, 6 feet beam, 5 feet deep? A. Yes; but a steam engine would be far more economical and satisfactory.

(23) J. K. D. writes: I desire some means by which I may be able to measure small intervals of time (say 1/10 to 1/100 second). The chronoscope or one of its modifications has suggested itself, but I find it inapplicable. Have electricity at command. A. A tuning fork carrying a straw marking-point, and vibrated so as to cause the point to mark on the smoked surface of a rapidly rotating disk or cylinder, might be used for the purpose, providing an electrical or other device were used to mark the interval across the path of the before mentioned straw.

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

A. W.—The soft stone is an impure and semi-decomposed feldspathic rock. The white soluble exudation consists of alum and iron sulphates. If obtainable in sufficient quantity, of some value.—C. E. B.—No. 1 is a fragment of shale, principally alumina silicate colored by iron oxide and carbonaceous matters. No. 2 is similar to No. 1 in composition. Neither contains graphite.—W. C.—The sample is not genuine atar of roses, although it contains a notable amount of the oil.

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

COMMUNICATIONS RECEIVED.

The Editor of the SCIENTIFIC AMERICAN acknowledges with much pleasure the receipt of original papers and contributions on the following subjects: Stove Drum. By J. H. F.