

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.

- Marine Iron Works. Chicago. Catalogue free. High grade well drills. Loomis Co., Tiffin, Ohio. For mining engines. J. S. Mundy, Newark, N. J. "U. S." Metal Polish. Indianapolis. Samples free. Yankee Notions. Waterbury Button Co., Waterbury, Ct. Screw machines, milling machines, and drill presses. The Garvin Mach Co., Spring & Varick Sts., New York. Concrete Houses - cheaper than brick, superior to stone. "Ransome," 757 Monadnock Block, Chicago. Machinery manufacturers, attention! Concrete and mortar mixing mills. Exclusive rights for sale. "Ransome," 757 Monadnock Block, Chicago. The celebrated "Hornsby-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Refrigerating Machine Company. Foot of East 138th Street, New York. The best book for electricians and beginners in electricity is "Experimental Science," by Geo. M. Hopkins. By mail, \$4. Munn & Co., publishers, 361 Broadway, N. Y. Send for new and complete catalogue of Scientific and other Books for sale by Munn & Co., 361 Broadway, New York. Free on application.

Moles & Queries

HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters or no attention will be paid thereto. This is for our information and not for publication. References to former articles or answers should give date of paper and page or number of question. Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all either by letter or in this department, each must take his turn. Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same. Special Written Information on matters of personal rather than general interest cannot be expected without remuneration. Scientific American Supplements referred to may be had at the office. Price 10 cents each. Books referred to promptly supplied on receipt of price. Minerals sent for examination should be distinctly marked or labeled.

(7103) A. D. asks if the Edison dynamos require larger wire in armature than in field magnets. A. The armature may generally be wound with finer wire than that used on the field. The relative resistance of field and armature varies with the relative sizes of wire and is fixed by such considerations as the adoption of series, shunt, or compound winding.

(7104) J. H. W. writes: Suppose a thermometer to be frozen or embedded in a cake of ice, surrounding it say 6 inches on all sides. What temperature will it record under these circumstances, and to what extent will it subsequently be affected by exterior changes of temperature? Should the temperature fall say to 15° or 20°, will the embedded thermometer show an approximate fall? I suppose it would show no rise above 32° Fah. so long as any ice covered it. A. The ice will act as a protective covering and the thermometer will be but slowly affected by the temperature of the surrounding air. If time enough is given, the thermometer will assume such temperature if below 32° Fah. It will not rise above 32° Fah. until the ice has melted away from it and the bulb is exposed all or in part to the air. A thermometer embedded in ice may register any degree of heat below 32° Fah.

(7105) L. D. asks: 1. How many miniature lamps and of what size can be run with a storage battery 36ampere hour, 2 volts, with a discharge of 4 amperes? A. The voltage is too low for a regular type lamp; the eight watts of your battery should give about one candle power. 2. What is the largest size motor that can be used with this battery? A. A small toy motor; the simple electric motor, SUPPLEMENT, No. 641, is too large.

TO INVENTORS.

An experience of nearly fifty years, and the preparation of more than one hundred thousand applications for patents at home and abroad, enable us to understand the laws and practice on both continents, and to possess unequalled facilities for procuring patents everywhere. A synopsis of the patent laws of the United States and all foreign countries may be had on application, and persons contemplating the securing of patents, either at home or abroad, are invited to write to this office for prices, which are low in accordance with the times and our extensive facilities for conducting the business. Address MUNN & CO., office SCIENTIFIC AMERICAN, 361 Broadway, New York.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

JANUARY 26, 1897,

AND EACH BEARING THAT DATE.

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

- Advertising arm chair, L. T. Hagan, 576,054 Air or other gases, recovering volatile substances from, C. Heinzerling, 576,714 Alarm, See Fire alarm. Amalgamator, J. J. Tinker, 575,864 Animal trap, A. T. Sullivan, 575,792 Annealing box, J. H. Orwig, 575,976 Asphalt pavements, process of and device for repairing, J. W. Buzzard, 575,697 Autographic register, W. H. Kelly, 575,958 Autoharp, E. V. Dexter, 575,707 Bag holder, G. N. Necker, 575,975 Bag or purse frame and catch, C. Hering, 575,837

- Baker's dipper, J. M. Anderson, 576,019 Baling press, W. S. Livengood, 575,943 Bearing, shaft, J. Done, 575,858 Bearings, anti-friction, V. Small, 575,866 Bearing, ball, J. B. Baker, 575,798 Bearing, ball, W. C. Quigley, 575,987 Bearing, ball, W. G. Parr, 575,981 Garment hook, C. C. Blossom, 575,822 Gas apparatus for producing acetylene, M. C. A. G. 575,884 Gas consumer, C. C. Brucker, 575,980 Smoke consumer, Schmal & Westphal, 575,988 Smoke or gas purifying apparatus, H. R. Chubb, 575,877 Soldering machine, can, A. Johnson, 575,807 Sole channelling and trimming machine, H. H. Arnold, 575,987 Spectacle temples, machine for turning, A. E. Johnson, 576,077 Spindle, A. Scheid, 576,059 Spouted can, R. W. Gillespie, 576,051 Sprinkler, See Lawn sprinkler. S and, See Combination stand. Starting and stopping mechanism, C. D. Rice, 575,810 Steam boiler, D. P. F. Cardozo, 575,811 Steam boiler, J. R. Vance, 575,786 Steam conduit, flexible, M. P. McLaughlin, 575,831 Steam trap, expansion, J. E. Chafer, 575,920 Stone borer, H. Schwarzenhauer, 575,738 Stool, canker, A. A. Lind, 575,721 Stove, O. H. Van Gilder, 576,019 Stove, double drum sectional heating, J. Fleming 576,049 Stove, heating, G. W. Cope, 576,024 Stove, petroleum, Ostlund & Malmstrom, 575,979 Switching machine feeding mechanism, A. J. Langlois, 576,067 Switch, See Railway switch. Switch and signal apparatus, J. G. Schreuder, 575,908 Table, See Drawing table. Folding table. Tank, See Siphon tank. Telegraph, printing, O. L. Kleber, 575,830 Telephone transmitter, R. S. Barnum, 575,869 Telephonic transmitter, M. Kotrya, 575,896 Thrashing machine band cutter and feeder, H. Wappalhorst, 576,011 Time register, watchman's, S. Bower, 575,739 Tire, elastic, C. K. Welch, 575,797 Tire valve, vulcanized, F. V. Bell, 575,817 Tire, vehicle wheel, E. Humbrecht, 575,072 Tire, wheel, E. E. Quimby, 575,783 Tires, apparatus for repairing pneumatic, Hines & Willard, 575,889 Tobacco cutting or slicing machine, J. H. Hubbell, 575,933 Tobacco method of and apparatus for disentangling cut, O. W. & C. Allison, 575,774 Track sanding apparatus for locomotives, T. J. Hennessey, 576,055 Transom lifter, S. N. Peck, 575,982 Trap, See Animal trap. Trolley track frog, W. J. Sumner, 575,770 Truck, railway, A. C. Mather, 575,723 Trunk fastener or lock, R. Cloughton, 575,922 Trunk handle, G. Crouch, 575,922 Tube, See Roentgen ray tube. Tubing machine head, W. H. Munn, 575,888 Tuning pin socket, C. W. Peck, 575,850 Type, machine for removing fin from, W. C. Chase, 576,027 Typewriting machine, G. B. Webb, 575,916 Vane, J. W. Murphy, 575,768 Valve, straight, F. W. O'Brien, 575,702 Vehicle runner, O. O. Storie, 575,825 Ventilator, See Car ventilator. Vessel, submarine, J. Scheubeck, 575,907 Vessels, raising sunken, J. R. Grant, 576,052 Violin players, device for regulating position of arms of, G. Wells, 575,798 Wig, portable, A. E. Brockett, 575,686, 575,687 Wagon seat, C. E. Weedon, 576,031 Washbowl fixture, T. E. Doyle, 575,924 Washing machine, D. F. Whiteman, 576,015 Watches, winding bar for stem winding, O. Ohlsson, 575,728 Water closet, M. Morell, 575,930 Water closet bowl repair coupling, P. W. Doyle, 575,923 Water cooler, J. Meltzer, 575,888 Water gate for fumes, cisterns, etc., A. H. Stoes, 575,998 Water heater for bath tubs, W. Gunn, 575,944 Water meter, J. A. Tilden, 575,743 Web associating and folding apparatus, G. B. Titworth, 576,007 Well drilling machine, Bunnell & Chapman, 575,688 Wheel, See Fly wheel. Wheel rim, machine for boring, D. H. Welivar, 575,745 Windmill regulator, S. A. Rouse, 576,078 Window dressing device, E. P. Wood, 576,016 Window dust screen, H. B. Shotts, 575,937 Wood, solidifying, J. McLachlan, 575,973 Wrench, J. J. Reinhart, 575,989

DESIGNS.

- Battery element, W. Mills, 26,567 Bolt washer, W. Heiser, 26,563 Book, J. Bristol, 26,566 Clock case, G. D. Golden, 26,568 Engine casing, J. W. Raymond, 26,566 Gas fixture, E. Lindner, 26,569 Hall rack, C. D. Golden, 26,572 Lamp attachment, F. Poy, 26,568 Radiator, A. W. Foots, Jr., 26,569 Shade roller, T. W. Shaw, 26,566 Switch contact member, M. Guett, 26,564 Switch handle, G. W. Hart, 26,566 Towel rack, C. D. Golden, 26,573 Toy chair, P. F. Pia, 26,571 Tray, A. W. A. Hofer, 26,570 Tube, C. F. Pike, 26,572 Underwaist, F. Kern, 26,574 Water wheel bucket, E. P. Jones, 26,568

TRADE MARKS.

- Beeswax, W. H. Bowdler, 29,519 Boots and shoes, having cushions upon their insoles, A. Reed, 29,498 Brandy, Pector & Ducout, Jeanne, 29,525 Brooms, J. W. Willard, 29,503 Canned salmon, Seufert Brothers Company, 29,520 Carpets, tapestry Brussels and tapestry velvet, Roxbury Carpet Company, 29,501 Crutch and handkerchief, J. Munn & Co., 29,506 Earthworking tools certain named, Collins Company, 29,534 to 29,536 Edge tools, certain named, Collins Company, 29,532 to 29,533 Envelopes, Thompson & Norris Company, 29,586 Eyeglasses and spectacles and parts thereof, Short, Nerney & Company, 29,504 Fishing rods, Montague City Rod Company, 29,504 Guns and pistols, I. Johnson, 29,530 Heaters, ranges and stoves, Majestic Manufacturing Company, 29,529 Hoes, D. & H. Scovill, 29,529 Leather dressing and polish, Goodrich Polish Manufacturing Company, 29,514 Liniment, Brandreth Company, 29,507 Liniment, C. Hillig, 29,586 Malt extract, W. E. & Thomas Brewing Company, 29,510 Medicine, certain named, B. Lauer, 29,513 Metal polishes, A. A. Fowler, 29,513 Ointments, creams, powders and soaps, preparations for skin diseases, including, Zomela Company, 29,511 Pepton of meat, Liebig's Extract of Meat Company, 29,522 Pills and pellets, Brown Manufacturing Company, 29,522 Remedy for women's diseases, G. G. Powning, 29,509 Rubber belting, hose, packing and utensils made of rubber, Peerless Rubber Manufacturing Company, 29,502 Saleratus, soda and salt, Church & Dwight Company, 29,515 Sewing machines, Wheeler & Wilson Manufacturing Company, 29,526 Shirts, Corlies, Coon & Company, 29,496 Shoes, boot hats, coats, caps, pants, vests, gloves and similar articles of apparel, T. Byrnes, 29,497 Shoes, men's and boys', Tootle, Wheeler & Motter, 29,499 Shoes, women's, misses' and children's, Tootle, Wheeler & Motter, 29,500 Sledges, hammers, wrenches, shoes, dies and saws, Collins Company, 29,537 to 29,539 Soap, M. Werk Company, 29,516 Soap for cleansing and dyeing purposes, Maypole Soap Syndicate, 29,517 Stoves and soldering apparatus, petroleum, B. A. Horth & Company, 29,527 Whisky, Alexr. Young Company, 29,524

A printed copy of the specification and drawing of any patent in the foregoing list, or any patent in print issued since 1883, will be furnished from this office for 10 cents. In ordering please state the name and number of the patent desired, and remit to Munn & Co., 361 Broadway, New York. Special rates will be given where a large number of copies are desired at one time.

Canadian patents may now be obtained by the inventors for any of the inventions named in the foregoing list, provided they are simple, at a cost of \$40 each. If complicated the cost will be a little more. For full instructions address Munn & Co., 361 Broadway, New York. Other foreign patents may also be obtained.