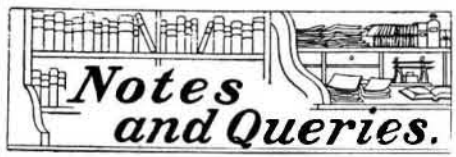


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Quadriga Manufacturing Company, 18 South Canal Street, Chicago. Inquiry No. 3847.—For makers of slot machines for water. Crude oil burners for heating and cooking. Simple, efficient and cheap. Fully guaranteed. C. F. Jenkins Co., 1103 Harvard Street, Washington, D. C. Inquiry No. 3848.—For manufacturers of microscopes. The largest manufacturer in the world of merry-go-rounds, shooting galleries and hand organs. For prices and terms write to C. V. Parker, Abilene, Kan. Inquiry No. 3849.—For parties engaged in enameling and nickeling bicycles. We manufacture anything in metal. Patented articles, metal stamping, dies, screw mach. work, etc. Metal Novelty Works, 43 Canal Street, Chicago. Inquiry No. 3850.—For small novelties for the mail order business. 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. Inquiry No. 3851.—For makers of tubes with screw top. WATER POWER FOR SALE.—Reliable 1,500 horse power located in State of New York. Owner would equip and rent power. Davidson, Box 773, New York. Inquiry No. 3852.—For a jointed handle flue scraper for water tube boilers. WANTED.—One of the "Simple Electric Motors" described in the Scientific American Supplement, April 14, 1888. State price and what year the motor was made. The older the better. Address Motor, P. O. Box 773, New York. Inquiry No. 3853.—For makers of rotary engines or steam turbines. PATENT FOR SALE.—Automatic envelope sealing and feeding machine, 250 office envelopes per minute. Great labor saver. Recently patented. See half page notice, this paper, October, 25, 1902. W. W. Gavitt & Co., Bankers and Brokers, Topeka, Kansas. Inquiry No. 3854.—For manufacturers of gas holders of from 1,000 to 5,000 feet capacity. Wanted.—Revolutionary Documents, Autograph Letters, Journals, Prints, Washington Portraits, Early American Illustrated Magazines, Early Patents signed by Presidents of the United States. Valentine's Manuals of the early 40's. Correspondence solicited. Address C. A. M., Box 773, New York. Inquiry No. 3855.—For makers of automatic tag machinery. WANTED.—Agency for agricultural implements, farming and household requisites, fencing wire, standards, etc., by an old established firm, in the midst of a large farming population. References: The Standard Bank of South Africa, Ltd., Robertson, C. C. Apply James O'Connor, Ashton, Cape Colony, South Africa. Inquiry No. 3856.—For makers of card slot machines. AUTOS.—Duryea Power Co., Reading, Pa. Inquiry No. 3857.—For makers of small water motors. Inquiry No. 3858.—For makers of brush-making machinery. Inquiry No. 3859.—For a small hand machine for mixing powders evenly. Inquiry No. 3860.—For manufacturers of novelties of every description. Inquiry No. 3861.—For makers of turned handles for fishing reels. Inquiry No. 3862.—For dealers in machinery for manufacturing snuff. Inquiry No. 3863.—For a small kitchen utensil used for making steak meat tender without making it into sausage meat. Inquiry No. 3864.—For makers of transparent platinum mirrors.



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.

(8852) W. J. V. asks if there is anything that will keep down the odor of oil when it is burned in lamps or stoves for heating purposes. A. Very careful regulation of the wick, so that it burns without a trace of smoking, is the only way in which the odor can be kept down to a minimum. It is practically impossible to have it burn entirely without odor. The burner should be well cleaned.

(8853) S. M. C. asks for a preparation to apply upon a cotton fabric that, after it becomes hard and dry, it will also become very flexible and not crack. We would prefer something thick, so as to cover up the meshes in the woven fabric. A. Practically the only kind of coating that would answer the requirement of becoming thoroughly dry, and still very flexible, is rubber. Linseed oil varnish, if sufficient time can be given to insure thorough drying and hardening, will give a coating of some flexibility; it would have the advantage over rubber of being easier to apply, and more readily admitting of mixing in coloring matters, if desired.

(8854) C. E. H. wishes cement which he could make or buy for fastening pieces of glass together, and which after hardening could be submerged in water without being affected unfavorably. We do not contemplate making water-tight joints with the cement, but simply to hold pieces of glass rigidly in place under water for experimental purposes. A. 1. Use Canada balsam, alone or slightly diluted with turpentine. 2. Dissolve 5 to 10 pints gelatine in 100 parts water; add 10 per cent of a concentrated solution of bichromate of potash, mix thoroughly and keep in a dark place. When the articles joined by this cement are exposed to sunlight for a short time, the cement becomes tough and insoluble in water. 3. Mix 4 parts quicklime, 6 parts litharge, and 1 part of linseed oil varnish.

(8855) D. W. K. asks how to make a solution of iron to be deposited by a battery in small quantity; also if a small Smee battery would be strong enough to deposit it, or what kind of battery should I require? A. Use either a solution of the double ferrous ammonium sulphate, or a mixture of 4 parts sulphate of iron and 3 parts sal ammoniac, dissolved in 30 parts of water. Use an iron plate or netting as anode. A Smee cell will do, but the Daniell cell is cheaper and will give as good results.

(8856) A. M. L. asks: Is it possible for four men to lift without straining, a heavy man lying rigid upon the floor? It is claimed that by the four men inspiring in unison while the one to be lifted is expiring, they can lift him like a feather. A. We do not think it is possible for "four men to lift a heavy man lying rigid upon the floor," without any exertion on their part. The only explanation we can offer for this experiment is that the act of attention to breathing together distracts attention from the effort of lifting. We have no doubt whatever that a dynamometer placed between the hands of the lifters and the man to be lifted would show that a real stress was put forth equal to the weight of the man lifted. It is not a great effort to lift a quarter of a man, and one can do it without taking much notice of the effort. The explanation is strictly psychological. There are many similar examples of putting forth great efforts without being conscious of it, as, for example, one escaping from a burning building, and carrying a person in his arms, may do feats of strength without knowing it, which would not be possible under ordinary circumstances.

(8857) W. A. J. wants to know where he can procure a luminous paint (one that is readable at night) and its price, or can you give me a recipe for making it? Can you also tell me of a paste, cement, or something for fastening paper letters on the rear side of glass? A. Calcium sulphide is considered the best material for luminous paint. Devoe & Reynolds can probably supply same. Dissolve 30 parts gum tragacanth and 120 parts gum arabic in 300 parts of water. Then add 2 1/2 parts of thymol mixed into 120 parts of glycerine. Finally add water enough to bring up to 1,000 parts. The thymol acts as preservative, and the glycerine prevents drying out and consequently springing loose from the glass.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending February 17, 1903, AND EACH BEARING THAT DATE.

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

Table listing inventions with patent numbers and names of inventors. Includes items like Adjustable seat, A. Adler; Advertising device, E. J. Sedlack; Aerated liquids from bulk on draft, apparatus for supplying, W. Nichols; Aerated apparatus, liquid, Gwynne & Sargent; Aerial device, C. A. Needham; Air in the production of mechanical energy, utilization of liquefied, C. S. Bradley; Alcohol burner, J. B. Steppe; Alkylated auramin and making same, C. Hoffmann; Amalgamator, Burden & Adams; Amusement apparatus, F. Robinson; Animal scraping or dehairing machine, J. W. Kohlbepp; Animal trap, W. Gabrielsen; Atomizer, J. Waldman; Attaching or detaching hook, automatic, W. E. Lafferty; Automobile driving gear, E. Rawson; Awning, G. E. Bedell; Axle box, car, G. G. Floyd; Badge, G. H. Brooks; Badge and pin therefor, button, W. D. Beethoven; Bag holder, A. D. Skinner; Bale tie, C. W. Harmon; Bale tie, S. J. Webb; Barium hydrate, preparing, C. B. Jacobs; Barrel holder, M. Derrig; Battery system, storage, R. N. Chamberlain; Bedstead post and rail joint coupling, A. W. Busby; Beer pipes, etc., apparatus for cleaning, E. Neely; Belt and garment supporter, C. W. Kohlmann; Belt, electromedical, F. Farmer; Belt fastener, M. A. Chilcote; Belt shipping device, A. Coulter; Beverages, apparatus for producing aerated, P. E. Malmstrom; Bicycle seat post, S. Bebe; Bicycle speed gear, rear driven, Haste & Wilding; Bicycles, apparatus for facilitating learning to ride, F. van Trutzchler; Billet heating furnace, V. E. Edwards; Binder leaf holder, transfer, I. H. Sisson; Binder locking device, transfer, I. H. Sisson; Binder, loose leaf, T. A. W. Tengwall; Binder, temporary or loose leaf, I. H. Sisson; Bit, F. P. Hall, et al.; Bit brace guide, J. H. McWeeney; Beat motor power, F. A. Creed; Boiler setting, W. L. Miner; Bolster, J. C. Wands; Bolt cutter, A. L. Moore; Bolt lock, F. J. Wagener; Boring or cutting tool holder, F. H. Leser; Bottle, D. Knowlton; Bottle capping machine, C. Le Du Vivier; Bottle filler, siphon, C. S. Doley; Bottle neck supporter, J. J. Cappelen; Bottle, non-refillable, L. E. Shogren; Bowling pin, B. A. Stevens; Brake, J. E. Berry; Brake beam, S. A. Crane; Branding fluid, Brown & Staples; Brick, J. B. Dunlap; Brick column die, C. Schlickeysen; Brick cut-off table, W. Frey; Brick cutting and delivering apparatus, A. P. Steele; Brick-making machine, E. H. Janes; Bridle bit, C. Davis; Brush, J. R. Sanford; Brush, hat, J. Oberselder, Jr.; Buffing machine, S. W. Ladd; Buggy seat, Weiglein & Brodbeck; Bulkhead door, W. B. Cowles; Calipers, micrometer, R. Miller; Calipers, outside, M. H. Ball; Camera, photographic, L. J. R. Helst; Can spout, F. J. Spiegler; Cant hook, E. Counts; Cap and girder support, combined, H. Russell; Car body extension top, F. S. Ingeldsby; Car bumper, C. Rettig; Car coupling, W. Graupner; Car coupling, G. P. Ritter; Car coupling, W. H. Sanders; Car coupling device, W. F. Gould; Car draft attachment, H. Martin; Car grain door, railway, D. B. Arnold; Car handling and dumping device, E. Ramsay; Car roof, W. J. McCulley; Carbonates and chlorides, producing, G. F. Rendall; Carburetor, rifle and carpenter; Card cutting machine, Cornelius & Eubank; Carpet fabric, woven pile, A. Webb; Carriage for track cables, C. A. Case; Cashier, mechanical, C. F. Cassett; Caster, A. B. Biss; Centrifugal separator, J. P. Hultgren; Chair pad, E. E. Davenport; Chairs, revolving twin, G. C. Hawkins; Chuck for drills, etc., H. F. Hagedorn; Cigarette wrappers with mouthpieces, machine for making, S. D. S. & S. D. Rakovitzky; Clamp, E. C. Karl; Clay articles, machine for enameling, F. Macarthy; Cleaning and polishing compound, P. Levi; Clipper, animal, A. Hawtree; Clock, alarm, J. Hauser; Cled cutter and pulverizer, adjustable, J. P. Hoops; Coaster brake, E. W. Clark; Coke oven, M. E. Rothberg; Color exhibiting device, H. Westfahl; Combustion, device for securing more perfect, E. Heness; Concrete beams, girders, etc., with iron bars inlaid for building purposes, manufacture of, H. Stewart; Condenser, F. Lamplough; Condenser, T. M. Eynen; Condenser and heater, R. F. Piatt; Conduit sections, machine for leveling the inner walls of, R. W. Lyle; Cooking apparatus, steam feed, M. W. Williams; Corn shocking machine, knot tying device, O. S. Ellithorp; Cornstalks, etc., manufacturing products from, G. R. Sherwood; Corn thinner, H. G. Horn; Crate, collapsible, W. B. Boutwell; Croze, cooper's, G. W. M. Delfs; Cuspidor, C. A. Payne; Cut-off and means for operating same, D. L. Bustice; Developer, J. G. Dubler; Directory, commercial, E. S. Brooks; Disinfectant distributing device, S. Hesketh; Display rack, G. A. Weeks; Distilling apparatus, water, J. F. Chase;

Table listing inventions with patent numbers and names of inventors. Includes items like Distribution system, J. L. Creveling; Doll head, O. Krampe; Dolly bar, W. A. Miller; Door holder, J. R. Carrell; Door lock, E. Teth; Draft equalizer, P. J. Grady; Dredge, F. H. Stelp; Dredging machine, C. Sonderegger; Drill, R. J. Brothem; Drying cylinder, C. H. Fish; Dust collector, E. R. Draver; Dust pan, E. P. Wade; Dynamo driving mechanism, J. L. Creveling; Earthworks, apparatus for performing, F. Pawel; Eaves trough hanger, A. A. Schroeder; Elbows, making, C. Williams; Electric battery, E. R. Gill; Electric battery, M. M. Kahn; Electric battery, V. G. Apple; Electric brake, J. C. Henry; Electric brake, F. C. Newell; Electric circuit and polarity indicator, V. G. Apple; Electric circuit regulation, Burgess & Frankfield; Electric lighting system, J. F. McElroy; Electric train lighting, J. F. McElroy; Electric train lighting system, J. F. McElroy; Electrical distribution, multiple series system of, Leveridge & Haskins; Electrical distribution system, J. L. Creveling; Electrical influence machine, S. Lemstrom; Electrical interrupter, G. P. McDonnell; Electrical machines driven by steam motors, regulating device for, C. E. L. Brown; Electrolytic diaphragm and making same, H. Redman; Elevator brake mechanism, electric, T. W. Eaton; Embroidering machine work holding attachment, J. Henderson; Engine cooling device, explosive, C. A. Bailey; Engine firebox attachment, W. J. Seavolt; Engine igniter, gas, L. P. Mooers; Engine speed regulator, traction, L. Branche, Jr.; Engine steering gear, traction, G. F. Conner; Engine stop, W. H. Dunn; Engines, hoisting mechanism for portable or traction, F. Bender; Explosive engine, H. W. Tuttle; Extension table, H. Johnson; Eyeglass cases, machine for covering, E. W. Lindquist; Fan, W. G. Shults; Fastening device, E. Peelle; Feed water heater, G. I. Roberts; Feeding and band cutting mechanism, F. S. Rich; Filaments of glow lamps, apparatus for reinforcing and standardizing, F. Fanta; File, J. Schaeffer; File, separable letter or bill, H. R. Gentsch; File, transfer, L. G. Schult; Filling machine, R. W. Huss; Finder and means for determining focal distances, combined, G. N. Pifer; Fire escape, T. B. Barber; Firearm, F. A. Beckwith; Firearm, gas operated, T. C. Johnson; Fireproofing material, O. Mack; Fish and fish refuse, apparatus for treating, J. Delattre; Fishing tackle, J. W. Wallace; Flaming machine, D. O. Paige; Flash light apparatus, S. M. Brown; Focusing head, G. H. Berr; Foundations, establishing subaqueous, E. Becker; Frame. See Plant-propagating frame; Fruit gatherer, J. A. Manor; Fruit-picker, D. Butler; Fuel compound, H. W. Morrow; Furnace charging, controlling, and distributing mechanism, Ramsay & Shannon; Furnace fire arch, A. H. Poppenhusen; Furnaces, feeding mechanism for billet heating, V. E. Edwards; Furrow opening disks, equalizing device for, A. Pedersen; Game board, kindergarten, K. H. Burrows; Game of cricket, table, C. E. Nicholas; Garment rack, hygienic, J. F. Messick; Garment supporter, F. Hirsch; Gas compressor, S. E. Alley; Gas generator, acetylene, W. E. Scofield; Gas light, H. Herz; Gas meter, J. W. Culmer; Gas retort, J. Bueh; Gate, L. V. Buford; Gate, F. F. Jackson; Glove, M. Torrens; Golf ball, F. W. Smith, Jr.; Governor, marine engine, E. C. Buck; Governor regulator, speed, I. E. Osman; Governor speed regulating device, engine, R. C. Kimble; Grader, G. Gottlander; Grain binder needle, F. E. Van Lean; Grain drill, F. E. Marsh; Grain hulling machine, A. E. Hedland; Grain rick stern protector, J. L. McFarlane; Grapple, W. Kirry; Grate, tubular, F. C. Williams; Grease cup, F. B. Casper; Grinding machine, Michael & Roberts; Grinding machine, flat surface, G. Gorton; Gun cleaner, J. M. Kersey; Hair crimper, N. McCarthy; Hair pin, safety, A. H. Mesher; Hammer, automatic, E. H. Swift; Handle for trunks, etc., R. Herrmann; Harvester, E. A. Mainguet; Harvester, grain, J. P. Steward; Harvesting machine, F. A. Ryther; Hasp fastener, A. Keller; Hat pressing and blocking machine, A. E. Cooper; Hay and stock rack, combined, S. J. West; Headlight, locomotive, J. S. Lester; Hinge, water closet seat and cover, A. F. Blesch; Hoist, W. L. McCabe; Holdback anchor, J. W. Elstun; Hollow ware pressing apparatus, Maddeck & Orme; Hook or attachment device, W. C. Peters; Horse blanket attachment, E. C. O'Neill; Horse controlling device, C. B. Corl; Horses kicking the stalls of stables, device for preventing, T. Laney; Hose and garment supporter, M. Rubin; Hub spoke brace, vehicle, B. A. Shepley; Hydrant, C. E. Lutzer; Ice cream freezer, S. Sweeney; Ice pad or support, E. G. Johnson; Illuminating glass structure, P. L. O. Wadsworth; Incandescent burner, A. Recter; Indicator. See Toilet room indicator; Insect trap, J. G. Williams; Insulated ferrule, H. E. Kern; Internal combustion engine, C. L. Straub; Iron, structural, J. Ellmore; Ironing board, auxiliary, R. H. Jackson; Jar top wrench, O. Teegarden; Jointing and blank forming machine, N. E. Brown; Ladder, folding, Chamberlain & Hall; Lamp burner, L. R. Oakes; Lamp, electric arc, A. Witte; Lamp, electric arc, H. Baggett;

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