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Mineral Lands Prospected, Artesian Wells Bored, by Pa. Diamond Drill Co. Box 423, Pottsville, Pa. See p. 46.

Hercules Lacing and Superior Leather Belting made by Page Belting Co., Concord, N. H. See adv. page 158.

Timber Gaining Machine. All kinds Wood Working Machinery. C. B. Rogers & Co., Norwich, Conn.

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Brass and Iron Working Machinery, Die Sinkers, and Screw Machines. Warner & Swasey, Cleveland, O.

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Supplement Catalogue.—Persons in pursuit of information of any special engineering, mechanical, or scientific subject, can have catalogue of contents of the SCIENTIFIC AMERICAN SUPPLEMENT sent to them free.

Notes & Queries

HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters, or no attention will be paid thereto.

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.

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.

(1) H. R. writes: We are about to lath and plaster a room in basement of store, to be used as a laundry. Can you suggest any way to effectually keep the fumes out of the store?

(2) E. E. S. asks the cause of an engine knocking or thumping when oil or tallow is put in the cylinder? A. Possibly the piston rings are loose or have play between the head and follower.

(3) J. M. H. writes: Why does the iron made now rust so badly and decay, while the iron made many years ago rusts comparatively but little?

(4) F. H. L. asks: 1. What are the soft iron castings to be used for the electric machine described in SUPPLEMENT, 161, and how are they to be obtained? Are they malleable iron castings?

(5) G. M. L. asks: How can I make an induction coil, such as are used in medical batteries, also what number of the SCIENTIFIC AMERICAN or SUPPLEMENT contains descriptions for making different coils?

No. 36 silk covered wire. SUPPLEMENT, 160, gives directions for making induction coils.

(6) J. D. L. writes: I wish to make an induction coil that will give an inch spark. Will one 6 inches long and 3 inches in diameter be large enough?

(7) G. A. C. writes: In the SCIENTIFIC AMERICAN of July 11, 1885, Note 1, there is a recipe for a cement which is proof against even boiling acids.

(8) G. S. B. asks: 1. Why does the cloudiness of the air and the number of rainy days in the year increase gradually from the equator to the polar regions, while the annual quantity of rainfall decreases in the same direction?

(9) J. D. C.—The belt has no influence upon the regulating power of the flywheel, whether it runs on the flywheel as a pulley or on a separate pulley.

(10) V. W.—The eyebrows may be darkened permanently by the use of a silver hair dye, which can be obtained from any druggist.

(11) C. S. asks how to waterproof the tackle and rigging of vessels. A. Either of the following can be used: 1. India rubber in small pieces 1 ounce, boiled oil 1 pint; dissolve by heat, then add 1 pint hot boiled oil, stir well, and cool.

(12) E. W. writes: I have a small engine, 2 inches bore by 3 1/2 inches stroke. What size boiler is necessary, and how is the best way to make?

(13) F. W. G. asks: 1. What amount of weight would borts or black diamonds (when set in drill bits) hold up without crushing? Suppose the bit stood on rock, and the pressure was downward, from weight of drill rods upon the bit.

(14) A member of the House of Representatives, U. S., asks the materials, quantities, and manner of making the starch by which laundries put the fine polish on shirt bosoms, etc.

(15) J. P. P.—It is extremely doubtful if you can rip 1 1/2 pine and hard wood with a 6 or 8 inch saw with any speed or comfort.

(16) E. R. B. asks: Does the bile ever enter the stomach? If so, does it remain long enough to be a cause of biliousness?

There is normally, therefore, no bile ever in the stomach, but it is abnormally often thrown backward into it, and thus produces irritation and nausea.

(17) J. C. S. asks the materials used in the manufacture of a paint sold under one of the special trade marks used by paint combinations which the trade has on sale.

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

F. B.—The specimen is pyrite, or sulphate of iron. It has no value.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted,

March 2, 1886,

AND EACH BEARING THAT DATE.

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

Table listing inventions with patent numbers, including: Aerial navigation, ship for, L. A. Beardley; Air compressor, hydraulic, W. Thomas; Alarm, See Electric leak alarm; Amalgamator, J. Wilkins; Animal trap, L. J. Hauserman; Ash pan, J. H. McKeown; Axle lubricator, car, W. H. Herbertson; Back band hook, S. Ward; Baling press, W. S. Bryan; Band tightener, J. Reid; Barrel, wooden, W. M. Allyn; Battery, See Secondary battery; Bed bottom, spring, M. C. Silver; Bedclothes holder, F. P. Sargent; Bed, folding, Horn & Hopf; Bedstead, cabinet, Cochrane & Kirk; Beehive, W. O. Vincent; Bell, call, W. C. Homan; Belt reel, D. B. Kuhn; Belting, machinery, R. F. M. Chase; Bending block, D. C. & J. G. Mahon; Bicycle lock, A. P. Merrill; Bicycle saddle, F. J. Lillbridge; Billiard chalk holder, W. E. Davis; Binder for papers, temporary, E. L. Shipman; Biscuit cutter, R. J. Hewitt; Blind and wire screen, combination of, F. A. Ransom; Blind sash adjuster, R. M. Martin; Blind, window, H. Hawley; Block, See Bending block. Horse block; Blotting pad and memorandum book, combined, H. C. Whitney; Board, See Siding and roofing board. Wash-board; Boat, See Fisherman's minnow boat; Boiler, See Steam boiler; Bolt holder and pipe wrench, combined, A. W. Becker; Book cover and removable leaf, combined, E. W. & J. F. Snow; Boot drier, Brewster & Sherwood; Boot or shoe, rubber, J. S. Owner; Boot or shoe sole, E. S. Harris; Boots or shoes, machine for making box toes and stiffeners for, Riedell & Litch; Bottle stopper, A. Luedemann; Bottle washer, G. J. Fritz; Bottle washing machines, brush holder for, J. M. Hoyt; Box, See Signal or call box. Toy money box; Brake, See Car brake. Vehicle brake; Brake machine, F. Doerfler; Bricks, etc., drying shed for, O. McCoy; Broom holder, A. D. Stansbury; Brush, electrical, J. D. Culp; Bung, barrel, H. Roemhildt; Bung for beer kegs, casks, etc., W. W. Jackson; Bung, venting, F. R. & G. W. Tibbitts; Burner, See Gas burner. Lamp burner; Button fastener, G. W. Prentice; Buttons, making, F. A. Smith, Jr.; Buttons to garments, fastening for attaching, Powell & Nolan; Cabinet, L. F. Gerbing; Candy, apparatus for cooling and heating, T. Burkhard, Jr.; Car brake, P. A. Gambaro; Car brake and starter, J. F. Morell; Car coupling, A. N., Jr. & A. L. Gabel; Car coupling, J. H. Harrington; Car coupling, G. M. Veteto; Car coupling, F. E. Rousseau et al.; Car, motor, R. N. Allen; Car, railway, R. H. Wyman; Car seat recorder, Bywaters & Burke; Car starter, W. H. Johnson; Car, stock, G. D. Burton; Car, stock, G. Grossman; Car wheels, machine for rolling, T. W. Bean; Cars, track sanding apparatus for street, W. T. Butler; Card cutting machine, W. A. Kelsey; Carpet cleaning reel, Miller & McKenna; Carpet cover, F. Sanderson; Carpet sweeping machine, C. L. Travis; Carriage, baby, C. Lyne; Carriage body, J. Delahunty; Carriage curtain fastening, J. G. English; Carriage spring, R. B. Williams; Carrier, See Hay carrier; Cart, dumping, B. McGregor; Cart, road, J. D. Wilson; Cartridge loading machines, wad feed attachment for, O. F. Belcher; Case, See Honey box case; Centrifugal machine, J. Laidlaw; Chain, drive, J. A. Jeffrey; Chair, See Child's chair. Reclining chair; Chart, dress, J. Penley; Check rower, J. C. Butler; Child's chair, F. A. Parker; Chimney cowl, H. F. Seidel; Chuck, brace, J. Chantrell; Churn, L. D. Bunce; Cigars, machine for stamping, L. Grathwol; Clamp, See Floor clamp; Clasp for poultry, game, etc., suspension, Schussler, Jr. & Fredericks; Clipper, hair, S. W. Burwell; Clock, electric alarm, C. Korfhage; Clock striking mechanism, A. Fischer; Clothes line stretching device, F. Schweizer; Clutch, C. S. Scott; Clutch, friction, W. B. Tatro; Coat hanger, M. R. Maxwell; Cock, gas, E. P. Irons; Cockle and grain separator, J. B. Dishmaker; Coffin, J. Maxwell; Cold and manufacture of ice and apparatus therefor, production of, A. Schmitz; Cold storage chamber or refrigerator, G. C. Roberts; Collar, G. N. March; Collar, G. K. Snow; Collar, horse, P. R. Turneure; Colter, rolling, S. W. Ball; Comb, See Curry comb; Compress attachment for maps, J. Adler; Connecting pin, expandible, H. M. Montgomery; Copying roller, J. B. Leckie; Corkscrew, W. Crabb; Corn husker, J. P. Withrow; Corn husking device, N. Evinger; Coupling, See Car coupling; Cowl, See Chimney cowl; Crane, portable window, A. Anderson; Cream separator, W. H. Johnson; Cultivator, F. H. Austin; Cultivator, D. & R. B. Motherwell; Cultivator, cotton, Wilkinson & Curtin; Curtain fixture, G. H. Baer; Curtain pole ring, A. D. Field; Curry comb, T. Gingras; Cut-off valve, J. P. Simmons; Cutter, See Biscuit cutter. Stalk cutter. Strawberry runner cutter. Vegetable cutter. Wire cutter; Damper, stove or range, A. M. Blakesley; Digger, See Potato digger; Dish, soap, A. M. Hayward; Disinfecting device, A. H. Kidney; Display rack, J. A. Miller; Distance registering device for wheeled vehicles, E. S. Brownson; Distilling oil, process of and apparatus for, Norton & Rouse; Door lock, Ackerson & Shy; Door lock, W. Bohannon; Draught regulators, safety apparatus for automobile, C. W. Nason; Drawing and twisting, head for continuous, D. O. Pease; Drier, See Boot drier. Grain drier; Drill, See Fork drill; Drills, machine for clearing twist, J. A. Morton; Electric battery cell, J. W. Carter; Electric current meter, Borel & Paccard; Electric leak alarm for pipes, H. G. Bauman; Electric light fixture, S. Bergmann; Electric lighting circuit, R. Mackie; Electric lighting system, Mackie & McCarty; Electric machine, dynamo, F. Bain; Electric machine regulator, dynamo, N. Tesla; Electric machines, armature for dynamo, F. Bain; Electric machines, circuit connection for dynamo, N. McCarty; Electrical conductor, H. A. Clark; Electrical machine, frictional, A. L. Robbins; Electricity for destroying living organisms in the bodies of slaughtered animals, applying, C. S. Jones et al.; Electroliner, extension, J. T. Robb; Elevator, See Water elevator; Elevator bucket, H. B. Haigh; Elevator safety attachment, H. R. Ferris; Elevator safety device, A. O. Wuensche; Embroidering machine, Schmitz & Aidom; Engine, See Gas engine. Hydraulic elevator engine. Hydrocarbon engine. Rotary engine. Steam engine; Envelope machines, drying attachment for, E. H. Woodford; Evaporators, apparatus for automatically feeding liquids to, M. C. Barden; Excavating apparatus, odorless, P. F. Dewey; Extension key, J. H. Shaw; Extension screen, adjustable, T. C. Peck; Fabric turning implement, M. A. Rafter; Fabric turning machine, M. F. Connett, Jr.; Fare boxes, money drawer for, W. H. Harrison; Fastener, metallic, G. W. McGill; Faucet, force and drain, F. R. Tibbitts; Feed water heater, J. Mahoney; Feed water heater, O'Brien & Weaver; Fence post, J. Burns; Fence stay, wire, W. C. Gholson; Fences, machine for building wire, W. H. Biegelow; Fertilizer distributor, J. H. & T. Dodds; Fifth wheel anti-rattler, J. Long; File, bill and letter, J. S. Vanhorn; File handle, J. Chantrell; Filing device, bill and letter, J. S. Vanhorn; Filter, centrifugal, R. L. De Lisser; Filtering device for feed water pipes, J. Heath; Fire alarm boxes, attachment for, H. H. Rebeck; Firearm, G. W. Cilley; Fire escape, J. Bien; Fire escape, J. D. Jenkins; Fire extinguisher, hand grenade, A. E. Lytle; Fire extinguisher, prairie, A. W. Bunsey; Fire extinguishing projectile, W. A. Bartlett; Firepot, tinner's, J. Carter; Fisherman's minnow boat, F. W. Ward; Fishing hook and device for capturing fish, Scotland & Cordon; Fishing lines, reel for drying, J. W. Brooks, Jr.; Floor clamp, B. Page; Floor grinding machine, J. B. Harris, Jr.; Flooring, flexible, A. Adams & Hason; Food for animals, preparing, C. H. Voigt; Fork drill, C. Snedekum; Frame, See Picture frame; Fruit, flowers, etc., device for picking, J. S. Langhorne; Gas and obtaining ammonia and other products therefrom, purifying coal, C. F. Claus; Gas apparatus, Gogin & Jones; Gas, apparatus for the production of pure sulphurous, F. Randon;