

Business and Personal.

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Grindstone Frames—With cabinet base and all improvements. Send for circulars and prices. W. P. Davis, Rochester, N. Y.

Shingling gauge patent for sale. See page 28. Acme engine, 1 to 5 H. P. See adv. next issue.

"U. S." metal polish. Indianapolis. Samples free. Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J. 6 Spindle Turret Drill Presses. A. D. Quint, Hartford, Ct.

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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.

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Send for new and complete catalogue of Scientific and other Books for sale by Munn & Co., 361 Broadway, New York. Free on application.

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 This is for our information and not for publication.

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.

(4446) W. J. H. says: Please inform me if there is any way to prevent a boiler from priming.

Would you advise using potatoes for removing scale. If so, would 20 pounds be more than advisable for a 60 horse power tubular boiler, cut small and dropped in in the steam drum? I would like to have your idea about using coal oil for removing scale in boilers. A. The priming of a boiler may arise from incrustated tubes or dirty water, which lessens steam production, or possibly from overtaxing its capacity. Although potatoes are said to have been used for removing scale in boilers, we have too little faith in their efficiency to recommend them. Coal oil has the tendency to gather the dirt into a cake, which is liable to settle on the fire sheet and injure the boiler. The easiest to obtain and cheapest boiler cleaner is the ordinary sal soda or crystallized washing soda. One half pound to a boiler horse power, dissolved in the feed water and pumped into the boiler, where, after a day's boiling in the regular use of the boiler, it can be blown out by repeated filling up and blowing down three cocks at a time, while the boiler is running. Repeat and clean out the boiler.

(4447) H. M. T. asks: 1. If cocaine were applied to one spot of the body frequently, would it kill the nerves at that place? A. No. 2. What work on psychology would you recommend for the general reader? A. We recommend and can supply Sully's "Outlines of Psychology," price \$3 by mail post paid, also Munsell's "Psychology," price \$1.75.

(4448) T. H. says: 1. There is a spring coming out of a precipitous hill 250 feet from its base. It fills a 1 1/4 inch pipe. There is anxiety to know what horse power could be developed if it were brought to the base in a perpendicular pipe if properly handled. Also how much less would be the power if brought down in three perpendicular sections, that is a horizontal pipe from the bottom of one to top of another? Also what horse power at a grade 2 3/4°. Has a hammer with a sharp screw thread in the eye for receiving the handle ever been known or is it now original? If distilling water will not remove the odor of volatile matter, how can it be said that distillation can purify

it? A. We cannot rate the power of a spring without knowing the quantity of water flowing in gallons or cubic feet per minute, or the length of the pipe and the vertical height of the spring above the point of discharge, which must be open to the full capacity of the pipe. A direct line of pipe down the slope of the hill will give the greatest efficiency over the other line, as stated. We have no knowledge of a hammer with a screw eye. Distillation purifies water by separating mineral and organic matter from the distillate. Odors, if not eliminated by open boiling, may be absorbed by filtration through animal carbon.

(4449) H. B., Munich.—In regard to your numerous queries, we assure you that the United States naval authorities are thoroughly posted as to all the known improvements in naval armament, both for offence and defense. All the steel alloys have been tested and the nickel steel found to be the best for all purposes. The Mannesman tube process has not yet been made practicable for the great-gun tubes.

(4450) D. E. S., Eaton, O., says: Early in the spring of this year water works were put in operation here, the supply of water being taken from ten wells drilled 100 feet deep in a sandy loam near a creek. The wells are cased up with iron pipe. Up to a month ago the water seemed as fine for drinking purposes as any I ever saw, being slightly soft. For the past month the water has been tasting bad and has been getting worse. When drawn out of the hydrant it strongly resembles milk in appearance. A glass full will clear in about two minutes, leaving no sediment. By holding the glass to the ear a singing noise similar to that produced by soda water is heard, and quite a vapor or steam will rise. By holding a lighted match in this vapor the flame will brighten up perceptibly. The water smells and tastes like oil. Is the water healthy, or how can we test it (some simple way) to find what is the matter with it? After the water settles an oily substance can be seen on the surface. Would the water in our wells be as healthy or more so than the hydrant water? Population 3,500, closely built, no sewers, land flat, too much so for cellars. Will the water likely improve? The county infirmary is located a half mile up the creek from the wells, with its sewer emptying into the creek. Would that contaminate the wells? A. The indications are that you have gas or oil at a lower depth than the wells, and that the pumping has drawn the gas or oil into the water stratum. The singing noise is probably the gas escaping from the water. The water may not be injurious or unhealthy, yet we cannot say that it is healthy, but the taste and smell condemn it. The sewage from the county infirmary will not contaminate the wells, as the filtration of the creek water through the soil will purify the water. We should judge that the well water better than the hydrant water, provided that the wells are at a distance from water closets and cess-pools. It is very doubtful if your deep well water improves. Probably a new set of wells nearer the creek and not so deep, say 50 feet, and at quite a distance apart, will give you better service. The filtrate from the creek is better than the present supply.

TO INVENTORS.

An experience of forty 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

June 28, 1892.

AND EACH BEARING THAT DATE.

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

Table listing inventions with names and dates. Includes: Addressing machine, F. D. Belknap; Alarm, See Electric alarm; Alloying furnace, metal, W. A. Baldwin; Ammonia, manufacturing nitrate of, R. S. Penniman; Anchor, C. H. Eaton; Animal trap, H. J. Steiner; Axle box, A. Miller; Axle lubricator, E. H. Benners; Axle washer, N. M. Brinkerhoff; Axles, machine for forming lubricator grooves in vehicle, C. W. Brewer; Axles of electrically-propelled vehicles, thrust collar for, R. P. Ongood; Bar fixture, A. Brandson; Barrel elevator, C. A. Sterling; Bath apparatus, electric, H. E. Waite; Battery, See Secondary battery; Voltaic body battery; Battery, W. A. Childs; Bearing for screw nuts, ball, C. E. Brunthaver; Bearing, roll, A. Paterson; Bed bottom, coiled wire, T. W. Klippel; Bed, folding, H. Stevenson; Bed, sofa, W. Anderson; Bee smoking apparatus, A. G. Hill; Bell going door, J. P. Connell; Belt stretcher, G. P. Kenehan; Bicycle, S. E. Mosher; Bicycle stand, M. J. Russell; Bicycle wheel, C. H. Metz; Bit, See Bridge bit; Block, See Curbing block; Board, See Electrical keyboard; Boiler, See Steam boiler; Boiling and precipitating tower, G. E. Hanisch; Bolster standard, L. G. Cook; Book, account, J. E. Ames; Boomerang, C. H. Emerson; Boomerang gun, C. H. Emerson; Boot or shoe fastening, W. E. Bennett; Boots or shoes, machine for inserting screw-threaded wire into the soles of, L. Goddu; Box, See Letter box; Sheet metal box; Brake, See Car brake; Wagon brake; Brake beam, J. Green; Brick cutting machine, J. A. Snell; Brick kiln, Conley & Wolfe; Bricks, composition of matter for, A. S. Baker; Bridge gate, J. A. Parsons; Bridge bit, G. A. Parsons; Broom, A. M. Sanders; Buckle, M. Logan;

Table listing inventions with names and dates. Includes: Burglar alarm systems, automatic test for, A. Stromberg; Button cutter, L. Linkiewicz; Button, G. Heuser; Button, crocheted, C. Kessler; Cable car, M. H. Bronson; Cable traction mechanism, W. A. Butler; Cam, extension, B. F. White; Can, See Jacketed can; Can cleaning machine, G. Roth; Canning device, fruit, J. J. Isler; Car brake, pneumatic, E. M. Connel; Car brake, W. F. Gibbs; Car brakes, slack adjuster for, G. L. Harvey; Car coupling, Callaway & West; Car, railway, Hoadley & Bemis; Car window dust and cinder protector, E. B. Leopold; Carpet fastener, stair, T. H. Spurrier; Carpet stretching device, J. T. Lemon; Cart, dumping, L. Rodenhansen; Cartridge, J. M. Pollard; Case, See Hat packing case; Cash register, register, and check printer, W. H. Gilman; Cash register actuating device, G. Boemermann; Catamenial sack, N. M. Dyer; Cement, etc., machine for applying, H. D. Stone; Chain coupling link, drive, C. E. Hart; Change meter and check receiver, automatic electric, T. Mangan; Charcoal kilns, arrestin and extinguishing combustion in, A. Vickers; Cistern cleaner, C. R. Jenne; Cisterns, etc., device for cleaning, Malthy & Belcher; Clasp, See Corset clasp; Cleaner, See Cistern cleaner; Dish cleaner; Flue cleaner; Clock hand remover, G. E. Hollis; Clothes dryer, H. Stevenson; Clutch, G. Bender; Coin-controlled mechanism, Powell & Chandler; Color grinding machine, H. J. Weckauf; Column, structural, A. Coffin; Compass, mariner's, R. Oliver; Condenser, sectional surface, E. Nelson; Corset clasp, G. J. Pfaff; Corset, abdominal belt for, A. L. Weeks; Cotton press, J. L. Pridemore; Counter, J. Gaetje; Coupling, See Car coupling; Cup and saucer, E. M. Connel; Curbing block, street, S. A. Webb; Cutlery hardening apparatus, G. E. Smith; Cutter, See Butter cutter; Fruit or vegetable cutter; Thread cutter; Dental reflector and tongue guard, W. E. Anderson; Desk tool table, G. Larsson; Detector, See Pickpocket and coat thief detector; Dish cleaner, Harman & Polk; Doll, J. & P. Fleischmann; Drainage apparatus, E. M. Connel; Drainer and cooler, combined bar, W. C. Huss; Drainer for draught apparatus, H. Strater; Drawer, C. W. Nevel; Dredging machine, C. H. Souther; Drier, See Clothes drier; Drinks dispensing, W. M. Fowler; Dry violet, Gnehm & Schmid; Electric alarm, S. M. Mathews; Electric conductor, C. T. Snedeker; Electric conductor, composite, C. A. Mezger; Electric current regulator, C. D. Sigbee et al.; Electric key, W. E. Blodgett; Electric lock, Holder & Holmer; Electric machine, dynamo, J. J. Wood; Electric regulating apparatus, J. M. Bradford; Electric switch, Pilkington & White; Electric switch, mast arm, T. Dillon; Electric transformer, N. T. Wilcox; Electrode, secondary battery, H. G. Osburn; Elevated structure, C. C. Lockstaedt; Elevator, See Barrel elevator; Elevator, C. W. Baldwin; Elevator, P. Wright; Engine, reversing mechanism, E. T. 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Curry; Gauge, See Surface gauge; Garment hanger, C. W. Lambin; Gas making apparatus, Williams, Jr., & Peoples; Gas meter, W. N. Milsted; Gas retort, A. Coze; Gate, See Bridge gate; End gate; Gate, F. E. R. Maize; Gate, J. R. Seward; Geological formations, apparatus for illustrating, D. M. Barringer; Glass annealing oven, J. P. Whitney; Glass for windows, etc., manufacture of stained, Carter & Hughes; Glass grinding machinery, R. H. Havel; Glove fastener, C. H. Goodwin; Grain bin, P. P. Coler; Grain preparatory to grinding, process of and apparatus for dampening, Meier & Fritsche; Grain purifier, F. E. Manning; Grape picker, Moore & Jory; Grate bar, J. Montgomery; Gun, Livingston & Starrett; Gun barrels, manufacture of, F. Meixner; Gun magazine, W. E. Loomis; Gun magazine, A. Mercer; Gun spring, J. W. Atkinson; Guns, shell extractor for bolt, P. Mauser; Halter, A. E. 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Table listing inventions with names and dates. Includes: Jacketed can, G. B. Cooper; Jar fastening, R. I. Patterson; Joint, See Rail joint; Railway rail joint; Keys, device for carrying, J. C. Taylor; Kiln, See Brick kiln; Knife, See Utility knife; Knitting machines, electrical stop motion for, A. Beyer; Knob attachment, Doebler & Bryant; Lacing strings of shoes, eye for, W. Lang; Lacing studs, machine for setting, E. D. Welton; Ladder hook extension, J. A. Weston; Ladder step, S. Keeling; Lamp, R. H. Pass; Lamp, central draught, W. C. Homan; Lamp chimney raiser, E. M. Goldsmith; Lamp, fount for central draught lamps, W. C. Homan; Lamp or conductor support, electric, C. Bell; Lamp socket, incandescent, Smith & Foster; Lamps, receptacle for portable electric, H. Molendo; Lamps, wick raiser for central draught, W. C. Homan; Lantern, signal, J. H. Parsons; Lastering machine, A. E. Strickler; Latch, door, H. D. Wheatley; Latch, gate, A. R. Grimes; Latch, reversible, A. A. 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Boshart; Planting purposes, guide line for, H. Nichols; Plow point, G. C. Westervelt; Plow, reversible, A. Pirch; Plow, truck or rice farm, J. A. Taylor, Jr.; Pocket watch, J. H. Goertz; Poke animal, W. E. Elliot; Portable house, O. P. Howe; Power, application of differential, F. Burger; Press, See Cotton press; Printing press; Printing and folding machine, combined, C. Chambers, Jr.; Printing machine, combined for cylinder, L. C. Crewell; Printing press, perfecting, J. C. Fowler; Protector, See Varnish protector; Pump, plumber's force, J. H. Lawless; Pump, steam, J. A. Moxham; Punching machine, plates, machine for, H. C. Jones; Purse and pocketbook frame and catch, A. Goertz; Rack, See Meat rack; Rail and cross tie, combined, A. J. Moxham; Rail joint, A. J. Moxham; Rail joint, W. E. Elliot; Railway carriage lights, dioptric lens for, A. Nieuwenhuys; Railway conduit, cable, M. H. Bronson; Railway conduit, electric, C. T. H. Schwieger; Railway cross-tie, Elliot; Railway crossing, frog or cross for, A. J. Moxham; Railway, electric, J. W. Bates; Railway expansion rail, A. J. Moxham; Railway guard rail, E. A. Trapp; Railway hanger, C. W. Lambin; Railway rail and making the same, A. J. Moxham; Railway rail brace chair, W. M. Brown; Railway rail curve, J. G. Jordan; Railway rail joint, A. J. Moxham; Railway track, combination safety, S. G. Howe; Railway track switch pieces, A. J. Moxham; Railway tie, A. J. Harford; Razor strop, F. Kampe; Reamer, expanding, J. H. Phillips; Reclining chair, C. C. Lockstaedt; Recorder, See Passenger recorder; Rec. See Reel; Refrigerator, V. Hoerschelmann; Refrigerator, B. W. Kolb; Register, See Cash register; Valve register; Regulator, See Electric current regulator; Ring, See Finger ring; Hat packing ring; Rolling mill, J. A. Potter; Roof, portable, J. H. Rice; Rubber shoe, Powell & Marshall; Rubber shoe, E. A. Saunders; Sad iron, W. Hunter; Safe, M. S. Goldsmith; Sash fastener, J. N. Buwer; Sash holder, H. B. Hayes; Saw, cut-off, E. B. Hayes; Saw guide, G. M. Hinkley; Saw mill pawl and ratchet, G. W. Steinebrink; Sawing machine, J. M. Dequarden; Scraper, cotton, McAlister & Waddell; Screws, lathe attachment for cutting, R. Norwell; Scuttle and skylight, G. Weber; Secondary battery, W. L. Silvey; Seed huller, cotton, J. F. Faulkner; Separator, See Grain separator; Sewing machine, F. Lichtfeldt; Sewing machine, J. P. Stiles; Sewing machine tacking attachment, J. W. Blodgett; Sewing machine work guiding and grooving attachment, H. Henderson; Sewing sweat bands in hats, machine for, W. P. Gammons, Jr.; Shearing machine, P. Rohan; Shearing machine, bevel, H. C. Jones; Shears, J. H. Stratton; Sheep box and vat, combined, G. G. & S. B. Gayman; Sheet metal box, G. B. Cooper; Shutter fastener, M. F. Ten Eyck; Sifting and sorting meal and flour, apparatus for, Haggenmache (r); Skirt, street, E. J. Shaw; Skirt, C. G. G. G.; Sled, bob, R. Douglass; Slip holder, S. J. Keiso; Slotting machine, L. H. Colburn; Smoke consuming furnace, G. S. Riley; Spark arrester, J. W. Curran; Spark arrester, J. M. Owen; Sponge cup for school desks, J. S. McClung; Spool roughing machine, J. M. Brown; Spraying device for cooling beer, etc., C. C. Hanford; Square, center and key seating, J. B. Price; Stack of paper, J. M. Dequarden; Stamp and envelope gum moistener, W. R. Cole; Stand, See Folding stand;