

(9) R. R. W. writes: I am told by practical men and of experience that hardening tools in oil, such as sledges, hammers, chisels, and picks, is proof against cracking. Please tell me the kind of oil used and the process of so doing. A. Much depends upon the selection of the steel and the treatment it receives in welding as to its final condition in hardening. Steel for sledges, hammers, and picks should be of low grade, and not the highest for chisels. If careful attention is given to hardening at the very lowest heat possible, it will insure freedom from cracks even with water. You can harden at a higher heat with oil than with water with safety and that gives a preference to oil with many. The best oil is "pure winter strained lard," although many compounds of lard, fish, and mineral oils are used for cheapness. Heat slowly in a charcoal fire and dip, moving the article horizontally fast enough to free the surface of vapor bubbles, especially in hammers.

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

S. B. A.—A is quartz rock with mica. B is a chloritic gneiss, holding iron pyrites, and probably contains gold and silver. An assay of both would be advisable.—J. E. G.—It is a very pure kaolin or china clay, and very valuable to manufacturers of porcelain; its value is about \$40.00 per ton in New York city.—J. L.—No. 1 is what is termed an iron sand, and composed of magnetite and menaccanite, garnet rock, and quartz. The two first are black, the garnet yellow or red, and the quartz white. No. 2 is an ordinary micaceous clay of little value.—J. W. B.—A clay slate, holding iron pyrites, possibly containing gold or silver. An assay would be advisable.

COMMUNICATIONS RECEIVED.

A Sure Preventive of Chicken Cholera, by W. H. G. Comet, by C. H. C.

[OFFICIAL.]

INDEX OF INVENTIONS

FOR WHICH

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

December 12, 1882,

AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

A printed copy of the specification and drawing of any patent in the annexed list, also of any patent issued since 1866, will be furnished from this office for 25 cents. In ordering please state the number and date of the patent desired and remit to Munn & Co., 261 Broadway, corner of Warren Street, New York city. We also furnish copies of patents granted prior to 1866; but at increased cost, as the specifications, not being printed, must be copied by hand.

Table listing various inventions such as Acid manufacture of sulphuric, Advertising wagon, Air, compensating reservoir for compressed, C. L. Beers, Asphaltum concrete mixer, Auger, hollow, H. Beisheim, Awning, window, J. Willie, Axles, device for cutting metallic wagon, W. B. Carpenter, Baling press, T. W. & C. L. Ames, Barber's chair, L. W. Boys, Barrel register, Miller & Mauser, Bath apparatus, vapor, E. Pond, Bathing tub, portable, A. P. Browne, Bed lounge, P. Herbold, Jr., Bell ringing, pneumatic, R. P. Garsed, Bending machine, L. B. McNutt, Binder, temporary, J. L. Cassidy, Bit stock, A. H. Reid, Blind slat, S. E. Adamson, Blind slat adjuster, G. W. Springsted, Boiler, See Steam boiler, Bolting chest, N. Cornelius, Bone black kilns, discharge apparatus for coolers of, R. J. Barr, Boot or shoe, J. R. Cancio, Boot or shoe, S. K. Hindley, Boot or shoe, W. Lyon, Bottle stopper, J. B. Davids, Bouquet holder and badge pin, combined, C. P. Jacobs, Box, See Packing box, Shelf box, Telegraph signal box, Wagon box, Watch movement box, Bracket, See Lamp bracket, Brake, See Car brake, Brick die, G. F. Earhart, Brick, method of and apparatus for making, J. C. Anderson, Bridge guard, swing, G. E. Mörstad, Brush boring machine, M. G. Imbach, Buckle, harness, F. Conway, Buckle, suspender, S. A. Bostwick, Buckle, trace, G. B. Northrup, Buildings, protecting apparatus for, Crowell & Dawson, Burner, See Hydrocarbon burner, Vapor burner, Butter jar, Carey & Cavanaugh, Candle moulds, air distributor for, W. H. Haney, Cane and picnic chair, combination walking, H. M. Houston, Canes, umbrella handles, etc., attachment to, F. G. & B. C. Stidger, Capsule cutting machine, H. H. Taylor, Car attachment, street, C. De Staebler, Car brake, E. H. Brown, Car brake, H. F. Notbohm, Car brake, automatic, C. Van Dusen, Car coupling, J. Geides, Car coupling, E. N. Gifford, Car coupling, F. W. Kelly, Car coupling, Peace & Sankey, Car coupling, A. E. Poland, Car coupling, W. J. Ross, Car label holder, C. J. Shafter, Car platform gate, A. v. Briesen, Cars, escape door for railway, T. E. Flint,

Table listing various inventions such as Carburetor, A. W. Lacy, Carpet lining, F. P. French, Carpet sweeper, L. B. Shute, Carriage spring machine, Briggs & Hess, Cash railway, G. Willett, Chain carrier, G. Gowan, Chair, See Barber's chair, Folding and reclining chair, Window cleaning chair, Check or other paper representing value, M. F. Berry, Chest, See Bolting chest, Fireproof chest, Cherry seeder, G. W. Knapp, Chimney, J. Brownell, Churn, N. Smith, Churn, W. A. Wilson, Cigar perforator, J. Talbot, Cigars, machine for cleansing, coloring, and flavoring, Hull & Ogden, Clevis, C. F. Dulling, Clock, calendar, M. L. Jacquemin, Clock movement, time and alarm, F. A. Lane, Clock stand, G. Hills, Clock, torsion pendulum, A. Harder, Cook for steam engines, cylinder, E. E. Mueller, Coffee compound or substitute, A. & M. Conroy, Coke oven door, W. G. Merriman, Composite washer, C. A. Rodney, Cooker, baker, and broiler, combination, W. B. Billings, Cooking vessel spoon holder, J. A. Hemsteger, Cooking vessel, steam, J. R. Walls, Cooler, See Water cooler, Corset, S. Heilner, Corsets, back protector for, M. P. Bray, Cot, folding, F. S. Martyn, Cotton gin rib, J. H. Mitchell, Coupling, See Car coupling, Harvester pitman coupling, Pipe coupling, Shaft coupling, Crane for clothes-lines, pulley, D. Sullivan, Culinary utensil, E. J. Barlow, Cultivator beams, lifting device for, J. T. Hamilton, Cultivator, harrow, and marker, C. La Dow, Cultivator, spring tooth sulky, C. La Dow, Cut-off, rain water, G. Lemle, Cutter, See Lozenge cutter, Cutter head gauge, W. L. Dodge, Delivery apparatus, L. C. Crowell, Dental plugger, W. H. H. Hunter, Derrick, Starke & Crowley, Desk, writing, J. J. Johnston, Die, See Brick die, Thread cutting die, Diffusion apparatus, R. Sieg, Door and drawer plate, S. G. Howe, Door hanger, E. C. Stearns, Draught equalizer, J. W. & A. B. Lawler, Draw bar spring, J. F. Collins, Drawing, spinning, and twisting apparatus, F. W. Fox (r), Dredging machine, H. B. Angell, Dress weight, E. J. Brooks, Drill, See Grain drill, Drill frame, Clark & Lee, Dumping platform, Savage & Love, Dust and sewer trap, H. Pennie, Eaves trough, C. R. Everson, Edger, gang, S. White, Electric machine, dynamo, E. A. Sperry, Electric machines, armature for dynamo, F. Bain, Electric machines, armature for dynamo, A. B. Fisher, Electric motor for Geissler tubes, W. J. McCollom, Electrical conductors, conduit for, J. K. McLaughlin, Electrical locomotive, E. J. Molera, Elevator, See Hay elevator, Elevator indicator, hydraulic, Schon & Brown, Engine, See Gas engine, Rag engine, Traction engine, Fence, W. M. Butler, Fence wire, machine for winding, W. B. Knight, Filter, water, P. Abbott, Filter, water, J. W. Bailey, Fire alarm signals, recording instrument for, Dean & Whiting, Firearm sight, F. De Lorme, Fire damp indicator, I. Kitsee, Fire escape, O. Sutphen, Fire escape, extension, P. Schuh, Fire extinguishing sprinkler, automatic, W. A. Wilson, Fireproof chest, J. H. Nolan, Folding and reclining chair, W. G. Sands, Folding table, E. F. Blythe, Foot coverings, manufacturing, S. G. Alexander, Frame, See Drill frame, Frame and plaque, combined, A. Currier, Fruit jar, E. Livermore, Fruit picker, L. Simkins, Fuel in cities, process of and apparatus for distributing liquid, Du Motay & Stern, Furnace door, H. Higgins, Furnace raking attachment, A. H. Lee, Gauge, See Cutter head gauge, Galvanizing appliance, H. Cull, Game, G. W. Hoar, Gas, apparatus for regulating the supply of, J. McLennan & Owen, Gas engine, K. Teichmann, Gas engine, H. Wiedling, Gas fixture, extension, J. F. Brown, Gas generating process and apparatus, W. F. Browne, Gas meter, P. E. Perez, Gas, process of and apparatus for manufacturing, H. M. & J. S. Pierson, Gate, See Car platform gate, Railway gate, Girth, A. V. Smith, Glass and crockery ware, screw thread for uniting articles of, W. H. Brunt, Glass signs, manufacture of, T. B. Atterbury, Grain binder, J. E. Buxton, Grain binding machine, J. F. Gordon, Grain decorticator, McChesney & Craig, Grain drill, J. A. Carr, Grain separator, J. Brunner, Grate, fire, P. Richards, Grindingmill hoppers, cover for, A. Ripplen, Grinding shears, P. Durham, Guard, See Bridge guard, Gun, composite, W. Paliser, Guns, mounting boat, Mason & Cunningham, Hame, E. G. Latta, Hammock and cot, J. C. Dodge, Handle for knives, forks, etc., J. S. & A. Ray, Hanger, See Door hanger, Harrow, J. F. Lyburner, Harrow, F. A. Morand, Harrow and cultivator, sulky spring tooth, C. La Dow, Harrow, riding, G. J. Hann,

Table listing various inventions such as Harrow, sulky, L. M. Gillett, Harrows, evener holder for, W. A. Howard, Harvester, J. M. Rosebrooks, Harvester binder, E. Heath, Harvester cutters to the cutter bars, securing, D. A. Kennedy, Harvester pitman coupling, T. Urle, Harvester reel, A. Schafer, Harvesting machine, E. L. Bracken, Hat blocking and shaping machine, R. Eickemeyer, Hat holder, F. A. Reichard, Hat stretching machine, R. Eickemeyer, Hay elevator, W. M. Mountain, Hay elevator and conveyer, W. M. Mountain, Hay press, T. W. & C. L. Ames, Hay rake, horse, A. W. Force, Head-light, locomotive, J. Kirby, Jr., Hearse, D. Schmitt, Hinge, D. D. Shupe, Hinge, trunk, R. G. Dayton, Holder, See Bouquet holder, Car label holder, Cooking vessel spoon holder, Hat holder, Horse tail holder, Lamp carbon holder, Pencil holder, Pillow sham holder, Sad iron holder, Hook, See Snap hook, Horse power, A. G. Holbrook, Horse tail holder, H. W. King, Horseshoe nails, machine for making, H. E. & E. F. Grandy, Hydrocarbon burner, R. F. Rankin, Hypodermic needle, A. W. Brinkerhoff, Hypohydroscope, W. L. Trenholm, Injector, See Elevator indicator, Fire damp indicator, Injector, medicine, J. A. Knight, Ironing table, J. J. Johnston, Jack, See Lifting jack, Jack and weighing scale, combined, S. H. Hyde, Jar, See Butter jar, Fruit jar, King bolt connection, vehicle, H. L. Kingsley, Knife, See Skinning knife, Knife, J. S. & A. Ray, Lamp, E. Blackman, Lamp, blast, R. Reach, Lamp bracket and match box, combined, J. Simpson, Lamp, electric, W. Stanley, Jr., Lamp, electric arc, C. M. Ball, Lamp, electric arc, L. G. Woolley, Lamp carbon holder, electric, C. M. Ball, Lamp fixture, extension, D. W. Parker, Lamp, miner's, J. Sawyer, Lamps, cut-out for electric, Coleman & Smith, Lantern, W. Porter, Jr., Latch, M. C. Niles, Latch, reversible, M. C. Niles, Lathe drill rest, Kelly & Sherman, Level, J. Robertson, Lifting Jack, A. D. Goodwin, Lifting jack, J. C. Michael, Lock, See Padlock, Permutation lock, Seal lock, Vehicle top lock, Lozenge cutter, hand, C. H. Hall, Lumber assorter, F. McDonough, Lumber drying apparatus, A. Thalheim, Mechanical movement, C. A. Wenborne, Medical compound, J. S. H. Wheaton, Medicinal compound, G. Ulrich, Meter, See Gas meter, Middlings detacher and granulator, C. Brown, Mill, See Rolling mill, Millstone dress, E. L. Conklin, Mixer, See Asphaltum concrete mixer, Moths, mildew, etc., preserving furs, feathers, clothing, carpets, etc., from, Stockman & Duffin, Motion, apparatus for converting, T. Sargent, Motion converting, E. T. Ailing, Motion device for converting, M. E. Weller, Motor, See Electric motor, Musical instrument, mechanical, O. H. Arno, Musical instrument, mechanical, H. B. Morris, Nails, manufacturing, J. M. Estabrook, Necktie, I. & J. French, Needle blanks, machine for swaging, W. H. Dayton, Needle cutting and stamping machine, W. H. Dayton, Oats, process of and apparatus for hulling, G. H. Cormack, Oil pail, J. W. Collier, Ore, process of and apparatus for the reduction of iron, E. Tourangin, Pack strap, C. Poirier, Packing box, G. L. Jaeger, Padlock, permutation, Michael & Fowble, Painted surfaces, method of and device for stippling, B. G. West, Paper, attachment for calender rolls for, Larkin & Tower, Paper, etc., machinery for edging or bordering letter, A. Duret, Parer, apple, A. Ripplen, Pencil holder, C. H. Hilliard, Permutation lock, J. W. Saxon, Permutation lock, W. Streeter, Permutation lock, W. W. Swett, Picker, See Fruit picker, Picker tag, J. N. Jones, Picks, etc., machine for forming the eyes of, W. E. Snediker, Pillow sham holder, A. H. Phelps, Pipe junctions of gas, etc., machine for cutting and fitting branches of, W. W. Stickney, Pipe coupling, T. B. Clatworthy, Pipe coupling, W. Martin, Pipe, etc., machine for bending gas, J. C. Spring, Pipe wrench, J. Lee, Planing mill feed roll, T. H. Rodenboh, Planter, corn, F. W. Merritt, Planter, corn, A. Woodward, Platform, See Dumping platform, Plow, D. Beets, Plow and pulverizer, combined, C. E. Sackett, Plow, gang, C. D. Carter, Plow, revolving, M. C. Niles, Plow, subsoil, S. B. Dover, Plow, wheel, F. C. Bryan, Potter's lathe, H. Mishler, Power, See Horse power, Preserved compound for mince pies, H. J. Allen, Press, See Baling press, Hay press, Printing machine sheet delivering mechanism, L. C. Crowell, Printing machines, air-cushioning apparatus for, L. C. Crowell, Projectile, W. Palliser, Pulley block straps, machine for forming, F. D. Bartlett,