

gas be used for the same purpose as natural gas? I am trying to find out if I can use coal gas for welding iron on a small scale.

(3478) E. D. H. asks: 1. What is the best formula for making dry hop yeast? What is the best mode of drying it? If dried by heat, about what should the temperature be?

(3479) L. S. says: We send inclosed two worms found in a piece of plush. Would you kindly tell me what they are and whether they are liable to injure goods?

(3480) W. R. B. asks how to make beef, iron and wine. A. Liebig's extract of beef 1/2 ounce avoirdupois, ammonio-citrate of iron 256 grains, spirits of orange 1/4 fluid ounce, distilled water 1 1/2 fluid ounces, sherry wine sufficient to make 16 fluid ounces.

(3481) G. L. B. asks how to make bluing for laundry use. A. 1. Dissolve good cotton blue (aniline blue B) in cold water.

(3482) K. F. asks: 1. What will cement thin ivory pads on nickel-plated steel triangles without coloring the ivory or injuring the triangle and that will set in 48 hours or less?

(3483) H. G. J. asks: What is the velocity of light and of the electric current? A. The velocity of light is 185,420 miles per second.

(3484) C. A. W. asks: Which travels the faster—light or electricity? Please state also the rate of each.

(3485) I. E. asks: 1. Is alumina manufactured in the United States anywhere. If so, where

and by whom? A. Address the Pennsylvania Salt Company, Philadelphia. It is a dyer's chemical.

(3486) J. C. writes: 1. In speaking of the resistance of fields in a shunt dynamo as being 14 times that of the armature, do you mean all the wire on armature or only half between the brushes, or as some say only a quarter of the armature wire is taken as the resistance of armature when comparing it with fields.

(3487) R. N. asks: During an argument in this city a few days ago, as to the component parts of glass, one party asserted that glass could be manufactured from straw.

(3488) F. F. writes: Can you tell me of a glue or cement, for the purpose of attaching cloth or felt to garments, that is absolutely waterproof, and will resist 140° Fah. of heat, also dry quickly?

(3489) E. G. H. asks (1) for some preparations that will render cane pole fireproof. I refer to the "fishing pole" grown in the South.

(3490) G.—A machine that will always keep itself in motion without exterior aid, and without consuming fuel, might be termed a perpetual motion. No reward offered.

(3491) M. S. P. asks: What can I coat tin battery cells with to make them acid proof? A. Try a coating of coal tar pitch.

(3492) E. B. C. asks: 1. Where can I obtain paramidophenol to be used for a developer as described in your paper of August 29?

(3493) J. M. L. writes: I have a well about 105 feet deep. When the well digger got down some 85 feet, the solid rock was struck. Then a hole was drilled 15 feet, water was found in either slate or soapstone, judging from the appearance of the material that stuck to the drill.

(3494) R. W. S. asks: 1. If a rifle ball be fired perpendicularly into the air, what velocity will it have when it returns to the earth?

bottom of the well. I want to know what I ought to have done to increase the supply of water. I have been told if I drop into the hole 2 pounds of quicksilver, it will cause the water to come in more freely.

(3495) E. P. G. says: Kindly inform me through the inquiries column in your paper what is the cheapest way of dressing the surface of a grindstone which has worn unevenly, to produce an even and true surface again?

(3496) P. W. K. asks: Will it make any difference which way you jump (while in a car moving at the rate of 60 miles per hour), either against or with the motion of the train?

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.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

October 6, 1891.

AND EACH BEARING THAT DATE.

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

Table listing inventions with patent numbers, including: Advertising purposes at night, illuminating balloon for A. Gross; Alarm, See Electrical alarm; Aquarium, G. P. A. Gunther; Axle box, car, T. B. Stewart; Axle lubricator, J. A. Scarborough; Axle, vehicle, Johnson & Mandt; Brassing machine, J. A. Scarborough; Bag holder, W. G. Adams; Bag making machine, three-cornered, Baron & Bibby; Baling cotton, J. G. Goldthwaite; Basting apparatus for supplying water to wash, J. J. Boyle; Basket wiring machine, J. Knopp; Bed brace, Critcher & Webber; Bed, folding, C. L. Gill; Bed, invalid, G. A. Leonard; Bell spring and copper holder, G. G. Campbell; Belting joint, D. B. Kelly; Bicycle, W. R. Mercer; Billiard table, pneumatic, E. L. McConaughy; Bit holder, compensating, S. B. Minnich; Board, See Game board; Boat detaching apparatus, automatic, B. A. Caperton; Bolt, See Paper box; Boiler, See Steam boiler; Wash boiler; Bolting devices, flap board for, J. A. Segbers; Boot or shoe heel, O. Zietz; Bottle, nursing, H. O. Flodin; Box, See Axle box; Document box; Letter box; Paper box; Box, J. H. Hartridge; Box lid fastener, H. H. Snow; Box lifter, E. Treasure; Brace, See Bed brace; Bracket for adjustable shelving, T. F. Mark; Brake, See Vehicle brake; Bread knife, R. J. Christy; Bread, meat, and vegetable slicer, S. Fehr; Brick kiln, W. L. Gregg; Bridge gate, M. & J. Higgins; Bridge, wooden, B. F. Ferguson; Bridle attachment, J. W. Beam; Buckle, G. W. Bussey; Buckle, J. Parker; Burner, See Gas burner; Hydrocarbon burner; Oil burner; Cable crossing, J. Dunott; Call boxes, central station apparatus for, E. R. Carter; Camera roll holder register, H. C. Boyer; Can labeling machine, H. Albert; Cane juice straining device, W. C. Hazlip; Car brake mechanism, M. Leary; Car coupling, W. Bentley; Car coupling, Goss & Harrell; Car coupling, J. W. Kirby; Car coupling, Moseley & Finch; Car coupling, H. L. Peck; Car door lock, C. H. Ives; Car, express, F. P. Doering; Car, hand, T. Lo Castro; Car journals, cap for lubricating boxes for, J. Parker; Car seal, E. S. Wheeler, Jr.; Carpet cleaning apparatus, pneumatic, G. L. Cummings; Carriage, S. R. Bailey; Carriage body, H. A. Muckle; Carriage seat, J. Currier; Carrier, See Parcel carrier; Cart, road, W. F. Murphy; Cartridge, P. Ambjorn; Case, See Mailing case.

Table listing inventions with patent numbers, including: Cash indicator, register, and recorder, P. Yoe; Casting grids, machine for, A. F. Madden; Centering device, R. C. Nulent; Chair, J. W. Doubler; Chopper, See Cotton chopper; Chuck, lathe, J. N. Skinner; Chuck for holding pipe nipples, R. G. Ferguson; Churn, G. P. de Laval; Clear box, printing machine, H. Leiman; Clamp for books, etc., J. Q. Moxley; Cleaner, See Cotton cleaner; Clock, alarm, W. Madel; Clothes drainer, A. L. Eversmeyer; Clutch, combined friction and positive, J. S. Adams; Coal conveyor, T. H. Lewis; Cock, compression, C. A. Sandlass; Coffee or tea pots, cold handle for, T. Bauer; Collar, J. A. Scriven; Collar and bames, combined horse, D. Paquet; Combining machines, mechanism for actuating the dabbing brushes of, J. Parkin; Compressing apparatus, F. Windhausen; Concentrator, G. Lang; Conveyor, J. M. Finch; Cooker, J. H. Gardner; Coat, W. Jolchmann; Cornice, H. Fritz; Cotton chopper, G. W. Allen; Cotton cleaner, seed, T. P. Townley; Coupling, See Car coupling; Thill coupling; Trace coupling; Crank motion, variable, A. Kitson; Cultivator, garden, J. A. Everitt; Cultivator tooth, J. W. Kraus; Curling iron, G. L. Thompson; Curtain fixture, H. S. Wainwright; Curtain pole ring, J. A. Rings; Cut-out, automatic safety, W. B. Cleveland; Cutter, See B. Doubler; Cutting and punching machines, spacing device for, F. Rittenhouse; Cutting device, electrically controlled, L. S. White; Dampers, automatic draught regulating, C. D. Howard; Dental engine, A. W. Browne; Dental engine head, A. J. Harris; Dial, timepiece, M. B. Martin; Die, See Sheet metal drawing die. Sole cutting die; Direct-acting engine, H. G. Williams; Dish pans or other vessels, stand for, M. C. Powell; Dish washer, F. W. Hoppe; Display stand, E. A. G. Kurth; Document box, Andrews & Jenness; Door closer, J. B. Kleinert; Dress shield, I. B. Kleinert; Drill, See Jeweler's drill; Drilling machine, F. H. Richards; Eaves troughs, machine for forming, J. Klein; Egg holder for setting eggs, Schuster & Link; Egg separator, J. G. Johnson; Electric conductor, W. Vogler; Electric motors, regulating the speed of, M. J. Wightman; Electric solenoids, core for, J. T. Williams; Electric switch, C. Wirt; Electric wire, W. Vogler; Electrical alarm, H. P. Smith; Electrode, secondary battery, W. A. Rosenbaum; Elevator, See Water elevator; Elevator controlling device, J. McAdams; Elevator gate operating device, A. C. Stewart; Elevator gate device, J. G. Johnson; Elevator wells, device for operating gates to, W. H. Wheeler; End gate, wagon, D. O. Duncan; Engine, See Dental engine. Direct acting engine; Engineer's slide rule, W. Cox; Engraving machine, F. W. Sabel; Engraving machine, pantographic, W. Goudie; Eraser and pencil sharpener, combined, G. W. Washburn; Evaporating pan, J. M. Duncan; Excitator, See Electric exciter; Feed water heater for steam boilers, J. Baird; Felting machine, C. A. Whipple; Fence machine, wire, J. J. Farden; Fence post, metallic, J. J. Farden; Fence stay fastening, wire, S. Eberly; Firearm, magazine or single-loading, A. W. Savage; Fire escape, I. Mills; Fish tank or aquarium, G. P. A. Gunther; Flood gate, T. F. Emans; Floor set, N. B. Marston; Flour bolting machine, J. C. H. Smith; Fruit picker, J. H. Woodward; Fruit stoning machine, J. S. Briggs; Furnace, See Heating furnace; Furnaces, apparatus for feeding sawdust and shavings to, Scott & Shearer; Furnaces, bell and hopper for blast, B. F. Conner; Game apparatus, C. M. Fisk; Game board, pneumatic, E. L. McConaughy; Gas burner, oil, W. H. Phillips; Gas holder, G. T. Thompson; Gases, apparatus for testing mine, T. Shaw; Gate, See Bridge gate. End gate. Flood gate. Sliding gate; Gate, M. Yackley; Gate opening and closing device, S. F. Rolston; Glass soaping and polishing machine, C. Delruet; Glassware, method of and apparatus for engraving hollow, A. Paschke; Glove fastening device, L. A. Douillet; Gold and silver from their ores, apparatus for washing and separating, W. J. Tanner; Goods forms, adjustable stand for, Huffer & Buehl; Grader, road, M. E. Lasher; Grain binder knottor, O. H. Watkins; Grain elevators, power transmission for, D. A. Robinson; Grain sampler, J. M. Stacy; Grain separator, McGill & Van; Grassing machine, W. F. Smith; Grooving machine, C. E. Thurlow; Guard, See Knife guard; Hackle for drawing and roving, J. McGrath; Hammock support and canopy holder, F. Welling; Harvester, corn, J. C. Entekin et al.; Harvester, J. F. Stinchcomb; Harvesters, finger beam attachment for, H. P. Galligan; Hatchway door operating device, R. Hallenstein; Hay rake, horse, G. Ward; Heater, See Feed water heater; Heater, W. H. Randall; Heating and ventilating apparatus and system, J. A. Skilton; Heating furnace, J. N. Hersh; Heel nailing machine, G. H. Cogswell; Heel seat beating machine, W. W. Aire; Hinge, F. L. Locke; Hinge, J. G. Harlow; Hinge lock, T. Corscaen; Hoisting machine, South & Chapman; Hoisting machines, drum shifter for, J. U. Elwood; Holder, See Bag holder. Bit holder. Egg holder. Gas holder. Hoop holder. Rein holder. Sash holder. Ticket holder. Typewriter copy holder; Hook, See Whiffletree hook; Horses, wearing pad for, J. E. Hayward; Hose, B. L. Stowe; Hose, E. L. Stowe; Hydrocarbon burner, W. F. Otis; Index, H. Brown; Indicator, See Cash indicator. Switch indicator; Ingot for plated wire, G. U. Meyer; Ingots for seamless plated wire, making, G. U. Meyer; Insulating material, composition for, E. Thomson; Insulation for electric wires, J. R. Markle; Iron, See Curling iron. Sad iron; Jack, See Lifting jack; Jeweler's drill, L. F. Claxton; Joint, See Belting joint. Rail joint; Kiln, See Brick kiln; Knife, See Bread knife; Knife guard, C. S. Wright; Knob spindle fastener, C. F. Garland; Lace fastener, arc, I. Roberts; Lace, R. W. Grace; Lamp chimneys, heating attachment for, G. L. Thompson; Lamp, electric arc, H. W. Libbey; Lamp electrode, arc, H. W. Libbey; Lamp, electrode, arc, I. Roberts; Lamp, electric, arc, I. Roberts; Lamp pencil, arc, I. Roberts; Lamps, globe protector for electric arc, E. J. Openthaler; Lathing, metal, C. H. Curtis; Letter box, counter door, E. Markell; Levee well, J. B. Folmer; Lifter, See Box lifter; Lifting jack, A. F. Rott; Lime, hydraulic, J. H. Wright; Lock, See Car door lock. Hinge lock. Permutation lock; Lock, J. T. Cole.

