

(37) T. J. S. says: Please give us a recipe for a cement that will resist the action of alcohol. A. Melt together equal parts of pitch and gutta percha. Apply hot.

(38) J. A. C. asks: Please name a substitute for lime in a washing compound of sal soda and lime, as the lime will not keep. A. We do not see that the introduction of lime, or any substitute similar in properties, is requisite. A solution of subcarbonate of soda (sal soda) in water is all that is required. The following recipe has lately been introduced in large laundries; it is of German origin: The clothes are simply boiled for about half an hour, with occasional stirring, in water containing about half a pound of common hard soap, ground fine, and 2 ozs. spirits of turpentine to the gallon. The clothes, after rinsing as usual in clean water, and drying in the air, do not retain the slightest odor of the turpentine.

(39) A. R. L. asks: Is there any acid used in the manufacture of sirup? Is it injurious, and how can I detect the presence of it? A. If you mean grape sugar sirup, yes, sulphuric acid; but it is all removed by lime. Test a small portion of the sirup with a solution of chloride of barium; the clouding of the solution indicates the presence of sulphuric acid.

(40) R. L. C. says: I have made an ink by mixing 5 gallons water, 1/2 lb. logwood, 1/2 oz. bichromate of potassa, and 1/2 oz. prussiate of potash, but this ink will not mix with other inks. Why if this? A. Ordinary ink contains gallate of iron, which is precipitated as Prussian blue on the addition of any mixture containing an alkaline ferrocyanide. At the same time a portion of the chromate suffers decomposition.

(41) P. J. B. asks: What substance will remove the gloss from a black coat, so that it will not immediately reappear? The shiny appearance is probably caused by its rubbing against the back of a wooden seat in a horse car. A. Sponge it regularly with a soap containing considerable alkali. If this does not succeed well, use benzole.

(42) W. W. A. asks: Is there anything injurious in paraffin wax, if mixed with bread? A. There is not, but paraffin is not desirable as food.

(43) T. L. M. says, in reply to M. H. C., who asks if a point on a connecting rod between the centers of the crank pin and crosshead journal describes a perfect ellipse, or if the figure it describes its slightly larger at one end than at the other: It describes a perfect ellipse.

(44) F. M. P. says, in reply to G. S. P., who asks about artificial egg hatching: Last spring, there were hundreds of chickens hatched in a box 2 feet square by 6 feet long, set on end. The upper half was full of frames like sieves, frames covered with canvas; these were 4 inches apart, on slides. They were filled full of eggs, and at the bottom of the box was a coal oil lamp burning; directly over it was a pan with water in to keep the air damp. The operation was watched, and the eggs were turned every day.

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

J. D. B.—It is red jasper.—F. D. B.—All four are flint, containing different percentages of iron.—J. B. H.—It contains about 20 per cent of iron.—H. C. B.—They are crystals of sulphate of lime.—O. H. J.—No. 1 is spiegel-eisen. No. 2 is flint. No. 3 is decomposed mica.—J. R.—It is compact quartz rock. The small percentage of iron contained in it may hurt it for the purpose proposed.—J. H. P.—No. 1 is fibrous selenite. No. 2 is iron pyrites. No. 3 is hornstone. No. 4 is milky quartz. No. 5 is ferruginous quartz. No. 6 is quartzite. No. 7 is shale. No. 8 is gypsum. No. 9 is iron sandstone. No. 11 is crystallized selenite.—W. M. B.—It contains sulphuric acid, chloride of sodium, carbonate of lime, and a great amount of organic matter. Add lime water, boil, and filter through gravel, sand, and charcoal.

COMMUNICATIONS RECEIVED.

The Editor of the SCIENTIFIC AMERICAN acknowledges, with much pleasure, the receipt of original papers and contributions upon the following subjects:

- On the Analogy of Light, Heat, etc. By S. A. C.
On a Lusian Nature. By J. H. P.
On Spiritualism, etc. By C. A. W.
On Railroad Rails. By P. M. A. and others.
On Flying Machines. By C. C. M.

Also inquiries and answers from the following: J.—T. L. R.—H. S.—H. W. C. T.—C. A. S.—B.

HINTS TO CORRESPONDENTS.

Correspondents whose inquiries fail to appear should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them. The address of the writer should always be given.

Enquiries relating to patents, or to the patentability of inventions, assignments, etc., will not be published here. All such questions, when initials only are given, are thrown into the waste basket, as it would fill half of our paper to print them all; but we generally take pleasure in answering briefly by mail, if the writer's address is given.

Hundreds of inquiries analogous to the following are sent: "Who makes Japanese tin novelties and toys? Who makes watchmen's time detectors? Who makes spring balances? Who manufactures india rubber?" All such personal inquiries are printed, as will be observed, in the column of "Business and Personal," which is specially set apart for that purpose, subject to the charge mentioned at the head of that column. Almost any desired information can in this way be expeditiously obtained.

[OFFICIAL.]

INDEX OF INVENTIONS

FOR WHICH

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

September 26, 1876,

AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

Table listing inventions with names and dates. Includes: Agricultural boiler, L. & C. Fuller; Arithmetic case, W. F. Baada; Artificial marble, L. De Planque; Axle lubricator, F. A. Bruns; Axle set and gage, W. C. Carleton; Bag holder, Green & Finney; Bag-turning machine, Judson & Van Houten; Balanced valve, B. T. Babbitt; Barb for wire fences, F. Armstrong; Barber's chair, etc., M. Leidecker; Basin faucet, E. S. Rich; Bee hive, E. F. Worrall; Bevel, G. H. Bradshaw; Bill file, C. S. Whitman; Bird cage, J. H. Chappel; Blowpipe, Dodge & Gushurst; Boats, detaching, W. A. Brice; Boats, detaching, Otterson & Reeves; Bolt cutter, W. A. Laurence; Book case, W. Homes; Boot and shoe, H. Brossel; Boot counter support, G. W. Powers; Boot soles, shaping, J. B. Johnson; Boots, making, J. W. De Castro; Bosom-ironing board, L. A. Van Kuren; Boxes, making, W. H. Allen; Bracket, C. B. Pettengill; Breach-loading fire arm, H. A. Castle; Brick and tile machine, F. J. Kennedy; Burial casket, E. Allen; Burner for coal, J. M. Hicks; Can, metallic, G. W. Bell; Cancelling postage stamps, etc., Palmer et al.; Candlestick, Z. I. Pratt; Car axle, J. D. Imboden; Car axle bearing, S. Clark; Car axle box and oiler, J. N. Smith; Car coupling, G. W. Putnam; Carbureter, J. A. Pierce; Carpet stretcher, G. C. Miller; Carriage hound, J. Fishbaugh; Carriage top, landau, R. Dunn; Casting composition boilers, M. F. Bingham; Casting medals, W. B. Moore; Chair and cradle, S. C. Megill; Chimney, M. C. Halsted; Chimney, G. F. Knight; Cigar cutter, P. A. La France; Clasp for corsets, M. E. Mansfield; Coffee roaster, F. Frlwe; Cooking range, T. J. March; Corn planter, H. Bettzell; Corn planter, L. B. Rowland; Corrugating sheet metal, S. S. Lapham; Cotton press, L. Lewis; Coupling vehicles, W. Goodwin; Cream from milk, separating, D. Pettengill; Curtain tassel, H. D. Osgood; Cut-off branch pipe, G. W. Howell; Cutting nippers, H. B. Todd; Dental plugger, C. M. Richmond; Diamond millstone dresser, A. C. Fry; Diamond millstone dresser, W. P. Uhlinger; Die, pipe elbow, S. G. Warner; Die, horseshoe, J. R. Williams; Drum screen for minerals, M. Neuberger; Egg beater, J. G. Brothwell; Emery grinder, G. Fowler; Envelope, G. H. Booth; Eraser holder and pencil protector, W. H. Bennett; Evaporating pan, J. S. Blymyer; Feather-curling machine, J. Hawlowetz; Fence, G. W. Young; Fence post, M. H. Knight; Fence post, W. W. Plank; Fire and burglar proof safe, I. J. Gray; Fire escape ladder, J. A. Groshon; Fireproof building, J. J. Schilling; Fire wood sawing machine, L. Ruel; Floating gin, C. Mann; Flood fence, W. Davis; Flue stopper, J. R. Higgins; Foli condenser, Hood & Reynolds; Folding bedstead, D. Arnaud; Fringe-twisting machine, S. Mortimer; Fruit gatherer, S. R. Ruckel; Furrow gage for plows, B. B. Hawse; Game apparatus, B. B. Townsend; Garment stand, F. A. Hatch; Gas condenser, surface, C. W. Isbell; Gas regulator, A. Parsons; Grain binder, J. Garrard; Grain, thrashing and separating, B. Carpenter; Grave filler, Parsill & Van Houten; Hair crimper, G. E. Hart; Hair-curling iron, M. E. Garnham; Hair pin, W. R. Clough; Handles, fastening hammer, etc., A. A. Goubert; Harmonica, E. D. Tuttle; Harrow, E. D. & O. B. Reynolds; Harrow teeth, S. Emery; Hay rake and cocker, M. Manlove; Head rest, G. A. Shaw; Heating stove, etc., C. D. Moody; Heel evener, Dilley et al.; Hides, handling, etc., J. R. Teass; Hitching post, C. F. Roth; Hoof expander, C. H. Shepard; Horse power, J. E. Muldrow; Horse rake, revolving, W. H. Hall; Horseshoe blank bar, A. B. Seymour; Horseshoe blanks, bending, J. Wilke; Horseshoe blanks, making, J. R. Williams; Hose coupling, Tyler & Severson; Iron boats construction, of, J. T. Smith; Irrigating apparatus, F. Taylor; Journal box, W. H. Lungren; Lace leather, making, H. Loescher; Lamp burner, E. Bolleau; Lamp shade, R. R. Crosby; Lasting machine, boot, G. W. Copeland; Lead traps and bends, making, T. F. Stevenson.

Table listing inventions with names and dates. Includes: Lifting jack, C. W. Tarr; Liquids, drawing effervescent, C. Greiner; Load binder, F. B. Turley; Lock hinge, C. J. Ferguson; Loom sheds, L. J. Knowles; Loom stop motion, F. O. Tucker; Lubricants, Vacuum Oil Co.; Lubricator, G. C. Johnson; Machine gun, E. Wilder; Magazine fire arm, J. W. Keene; Meat, cutting, T. Willis; Military accoutrements, W. S. Oliver; Milk, cooling and deodorizing, G. Abbott, Jr.; Millstone dress, P. B. Vicle; Mineral substances, etc., mixing, P. Lea; Mirror, L. T. Berton; Mortising chisel, E. H. Smith; Mower, H. H. Bridenthal, Jr.; Needle-threading device, J. Foster; Nut lock, E. G. Feithausen; Oil can, W. N. Thompson; Oil-burning locomotive, C. J. Eames; Ordnance, construction of, A. Krupp; Peg float, C. S. Sanford; Petroleum, treating, G. Allen; Pin-sticking machine, C. W. Pratt; Pipe nozzle, blast furnace, S. F. Vielhaber; Plating machine, L. J. Boyd; Plane guide, A. J. Teamer; Flow point, J. W. Beverly; Pneumatic railway, W. H. Bailey; Pressed glass pendant, J. H. Hobbs; Printing music, etc., M. Alshoff; Propulsion of vessels, E. J. Collett; Pump, F. Kahl; Pump, A. Riddell; Purifying iron and making steel, J. L. Randall; Radiator, J. R. Reed; Railroad crossing, D. Pierce; Railroad rail joint, J. E. Atwood; Rails, mode of utilizing old, J. Reese; Railway, A. S. Halliday; Reclining chair, N. N. Horton; Reference index, D. A. Davis; Remedy for hog cholera, M. R. Yewell; Reverberating furnace, H. McDonald; Revolving fire arm, J. Davis; Rivet heads, cutting, A. W. Mahon; Rocking chair, M. Ohmer; Rocking grate for furnaces, H. Adams; Rod adjuster for oil well, J. M. Reardon; Roofing material, C. M. Warren; Rope machine, Whiton, Thomas, and Hough; Rotary churn, J. R. Bennett; Rotary churn, A. M. Mortimer; Sad iron heater, Mizell & Seasons; Saw mill headblock, W. Phillips; Sectional steam generator, M. B. Buell; Seed planter, W. F. Finney; Shaft coupling, M. H. Kernaul; Sheet metal can, T. J. M. Jewell; Shingle jointer, C. Coy; Shovel-grinding machine, W. A. Meyer; Show case, Dallene and Messenger; Show case, J. Starr, Jr.; Show card, C. A. Righter; Siphon head, mineral water, J. W. Stillwell; Slide valve, J. Brady; Soda water fountain, C. Greiner; Spark arrester, W. Rushton; Spike-drawing tool, Converse et al.; Spindle and bolster, W. F. Hastings; Spinning top, C. Nicklas; Spring bed, G. A. Russell; Steam hammer, W. Walker; Stock separator, A. Minor; Straw cutter, A. Heverly; Sulky gang plow, T. B. Fagan; Swing, H. J. Blakeslee; Temporary binder, H. H. Edwards; Thill coupling, C. Sangster; Tie buckles, making, H. W. Oliver, Jr.; Time drop attachment, C. Ottrell; Tobacco, curing, C. S. Phillips; Tobacco extracts, treating, S. Krackowizer; Track clearer, Ferry & Manley; Truss, W. L. L. Pierce; Try square, F. Veazie; Tube expander, Tyler & Severson; Umbrella runner, Plume & Tucker; Vault cover, T. & T. Thompson; Vehicle axle, D. Dalzell; Vehicle hub band, Rouse & Stoddard; Wagon end gage, Z. C. Wilson; Wash board, J. O. Bentley; Wash boiler, J. W. Field; Washing machine, R. Murphy; Watch barrel, C. Barclay; Water closet, J. H. Keyser; Water filter, I. Brach; Water meter, J. R. Paddock; Water meter, P. Wells; Water motor, J. B. Morrow; Wheel cultivator, W. Aldrich; Wheel cultivator, S. P. Coons; Wheel plow, E. D. & O. B. Reynolds; Window mirror, C. A. Demling; Wire stretcher, R. Ellwood; Woven wooden fencing, J. J. Hall; Wrench, A. M. Mortimer; Wrench, J. T. Reed; Yarn-winding machine, W. Haslam.

DISCLAIMER FILED. 61,172.—BINDING FOR SKIRTS.—Thomas B. De Forest, Birmingham, Cald.

DESIGNS PATENTED. 9,501.—CLOTHES-DRIERS.—H. P. Roberts, Tunkhannock, Pa. 9,502.—STOVE BASKET.—B. F. Tutthill, Burlington, Vt. 9,503.—FOUNTAIN.—W. Tweeddale, Brooklyn, N. Y. 9,504.—EMBROIDERY.—E. Crisand, New Haven, Conn. 9,505.—FENCES.—A. Smith, Monticello, N. Y.

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