

(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 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 gallic acid 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 spiegelstein. 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 items like Agricultural boiler, Arithmetic case, Artificial marble, Axle lubricator, Bag holder, Bag-turning machine, Balanced valve, Barb for wire fences, Barber's chair, Basin faucet, Bee hive, Bevel, Bill file, Bird cage, Blowpipe, Boats, Boats, detaching, Bolt cutter, Book case, Boot and shoe, Boot counter support, Boot soles, Boots, Bosom-ironing board, Boxes, Bracket, Breech-loading fire arm, Brick and tile machine, Burial casket, Burner for coal, Can, metallic, Cancellor postage stamps, Candlestick, Car axle, Car axle bearing, Car axle box and roller, Car coupling, Carbureter, Carpet stretcher, Carriage hound, Carriage top, Casting composition boilers, Casting medals, Chair and cradle, Chimney, Chimney, Cigar cutter, Clasp for corsets, Coffee roaster, Cooking range, Corn planter, Corn planter, Corrugating sheet metal, Cotton press, Coupling vehicles, Cream from milk, Curtain tassel, Cut-off branch pipe, Cutting nippers, Dental plugger, Diamond millstone dresser, Diamond millstone dresser, Die, pipe elbow, Die, horseshoe, Drum screen for minerals, Egg beater, Emery grinder, Envelope, Eraser holder and pencil protector, Evaporating pan, Feather-curling machine, Fence, Fence post, Fence post, Fire and burglar proof safe, Fire escape ladder, Fireproof building, Fire wood sawing machine, Floating gin, Flood fence, Flue stopper, Foli condenser, Folding bedstead, Fringe-twisting machine, Fruit gatherer, Furrow gage for plows, Game apparatus, Garment stand, Gas condenser, Gas regulator, Grain binder, Grain, thrashing and separating, Grave filler, Hair crimper, Hair-curling iron, Hair pin, Handles, fastening hammer, Harmonica, Harrow, Harrow teeth, Hay rake and cocker, Head rest, Heating stove, Heel evener, Hides, handling, Hitching post, Hoof expander, Horse power, Horse rake, Horseshoe blank bar, Horseshoe blanks, Horseshoe blanks, making, Hose coupling, Iron boats construction, Irrigating apparatus, Journal box, Lace leather, Lamp burner, Lamp shade, Lasting machine, Lead traps and bends.

Table listing inventions with names and dates. Includes items like Lifting jack, Liquids, drawing effervescent, Load binder, Lock hinge, Loom sheds, Loom stop motion, Lubricants, Vacuum Oil Co., Lubricator, Machine gun, Magazine fire arm, Meat, cutting, Military accoutrements, Milk, cooling and deodorizing, Millstone dress, Mineral substances, etc., mixing, Mirror, Mortising chisel, Mower, H. H. Bridenthal, Needle-threading device, Nut lock, Oil can, Oil-burning locomotive, Ordnance, construction of, Peg float, Petroleum, treating, Pin-sticking machine, Pipe nozzle, Platting machine, Plane guide, Flow point, Pneumatic railway, Pressed glass pendant, Printing music, Propulsion of vessels, Pump, Purifying iron and making steel, Radiator, Railroad crossing, Railroad road joint, Rails, mode of utilizing old, Railway, Reclining chair, Reference index, Remedy for hog cholera, Reverberating furnace, Revolving fire arm, Rivet heads, cutting, Rocking chair, Rocking grate for furnaces, Rod adjuster for oil well, Roofing material, Rope machine, Rotary churn, Rotary churn, Sad iron heater, Saw mill head block, Sectional steam generator, Seed planter, Shaft coupling, Sheet metal can, Shingle jointer, Shovel-grinding machine, Show case, Show case, Show card, Siphon head, mineral water, Slide valve, Soda water fountain, Spark arrester, Spike-drawing tool, Spindle and bolster, Spinning top, Spring bed, Steam hammer, Stock separator, Straw cutter, Sulky gang plow, Swing, H. J. Blakelee, Temporary binder, Thill coupling, Tie buckles, making, Time drop attachment, Tobacco, curing, Tobacco extracts, treating, Track cleaner, Truss, Tube expander, Umbrella runner, Vault cover, Vehicle axle, Vehicle hub band, Wagon end gage, Wash board, Wash boiler, Washing machine, Watch barrel, Water closet, Water filter, Water meter, Water motor, Wheel cultivator, Wheel cultivator, Window mirror, Wire stretcher, Woven wooden fencing, Wrench, Yarn-winding machine.

THE VALIDITY OF PATENTS.

We recommend to every person who is about to purchase a patent, or about to commence the manufacture of any article under a license, to have the patent carefully examined by a competent party, and to have a research made in the Patent Office to see what the condition of the art was when the patent was issued. He should also see that the claims are so worded as to cover all the inventor was entitled to when his patent was issued; and it is still more essential that he be informed whether it is an infringement on some other existing patent. Parties desiring to have such searches made can have them done through the Scientific American Patent Agency, by giving the date of the patent and stating the nature of the information desired. For further information, address MUNN & CO., 87 PARK ROW, New York.

Advertisements.

Inside Page, each insertion --- 75 cents a line. Back Page, each insertion --- \$1.00 a line. Engravings may head advertisements at the same rate per line, by measurement, as the letter press. Advertisements must be received at publication office as early as Friday morning to appear in next issue.

HOUSE-BUILDERS, CONTRACTORS, & OTHERS.—The Champion Treble Door Lock, Best in the world. Agents wanted. Address LIGHT, HENRY & HAGUE, Mannheim, Pa.

SETS OF DRAWING INSTRUMENTS 75 to \$100. Drawing Materials of all kinds. Levels, Compasses, Tape Measures; Aneroid Barometer from 1 1/2 inches to 6 inches in diameter. Telescopes from \$50 to \$250 each. Spy Glasses from \$3 to \$25 each. Microscopes from \$3 to \$100. Priced and Illustrated Catalogues, Part 1st, 84 pages, Mathematical. Catalogues, Part 2d, 120 pages, Optical Instruments. Sent on application.

JAMES W. QUEEN & CO., Opticians, 924 Chestnut St., Philadelphia, Pa.

MANUFACTURER OF FIRST CLASS TAPS AND DIES, Pawtucket, R. I.

WANTED - EQUATORIAL MOVEMENT FOR A large Telescope Object Glass. Address W. D. MONROE, 756 Olive St., Cleveland, Ohio.

CHLORIDE OF CALCIUM. Fifty tons for sale in lots to suit. RANSOME, 10 Bush St., San Francisco, Cal.

IMPROVED PAPER BOX MAKER'S PASTING MACHINES. WM. DRAFER, Philadelphia, Pa.

DO YOUR OWN PRINTING FAVORITE Self-ink Press \$16 Presses from \$3 to \$125. Office complete \$5 Send 6c for 75 page book of presses, Type, Cuts, etc., illustrated with instructions, worth \$1. GORHAM & CO. BOSTON, MASS.

TRAPPER'S AND HUNTER'S HAND BOOK. Full instructions for trapping mink, muskrat, otter, and other fur-bearing animals, by a successful trapper of forty years' experience; also, game laws of the different States, etc. Send three cent stamp for circular. Address P. O. Box 5053, New York city.

NEW BROWN & SHARPE UNIVERSAL MILLING Machine for Sale. Address W. E. LEWIS, Cleveland, Ohio.

TO RAILROAD MANAGERS & CAR BUILDERS.—Complete Ventilation for railroad cars, street cars, and omnibuses, scientifically correct in principle, and mechanically very simple. Send for circular. Half the interest in the patent for sale. C. G. VAN PAPPELENDAM, Charleston, Lee Co., Iowa.

WANTED—Salesmen on Salary only. \$85.00 per month, and all travelling expenses, to sell goods of our own manufacture to dealers. No Penning. Address NOVELTY MFG CO., Cincinnati, O.

Scientific Farmer. Every intelligent Farmer should take it. Price \$1.00 a year. 3 MONTHS FOR 0. All subscribers for the year 1877 before that year begins will receive Oct., Nov., and Dec. Nos. of 1876 free. SCIENTIFIC FARMER COMPANY, 43 Chatham St., Boston, Mass.

NEW BOOKS. PRINCIPLES OF CONSTRUCTION AND EFFICIENCY OF WATER WHEELS. By Wm. Donaldson, M.A., A.I.C.E. 8vo., cloth, \$2. ON THE PRESENT STATE OF THE IRON MANUFACTURE IN SWEDEN. By R. Akerman, 4to, paper, \$1.50. ALGEBRA SELF-TAUGHT. By Dr. Paget Higgs, M.A., D.Sc., A.I.C.E. Crown 8vo., cloth, \$1.00. ELECTRO-TELEGRAPHY. By Frederick S. Beechey. 12mo., cloth, 60 cents. THE ELEMENTS OF GRAPHIC STATICS. By Karl Von Ott. Translated from the German. By Geo. Sydenham Clarke. Crown 8vo., cloth, \$2.00. Sent free by mail, on receipt of price. E. & F. N. SPON, 446 Broome Street, N. Y.

ALLIS, BULLARD & CO., Limited. Dealers in first class 2nd hand Machinery & Millinery Supplies. Large Stock Tools in Store for immediate delivery. 14 Dey Street, New York.

THREE THINGS IN ONE VENTILATION of a Fire Place; RADIATION of a Stove; CIRCULATION of a Furnace. Pure Air and an Even Temperature throughout a Room. "THE CENTENNIAL" Annex Main Building. Highest Centennial Award granted THE OPEN STOVE VENTILATING COMPANY, 107 Fulton St., New York.

\$100. REWARD. \$100. This MOUNTAIN produced on a smooth face by the use of Doves & Beans. Extra with ut factory, or will forfeit \$100. Price by mail in sealed package 25 cents, for three 50 cents. A. L. SMITH & CO., Agents, Palestine, Ill.

IRON BRIDGE BUILDING—A complete description, with dimensions, working drawings, and perspectives of Girard Avenue Bridge, Philadelphia, Pa. With foundations of piers. Ten engravings. Price 30 cents. Contained in Nos. 2, and 4 of SCIENTIFIC AMERICAN SUPPLEMENT, 10 cents per copy. To be had at this office and of all news agents.