

(66) E. B. K. says, in reply to J. C. M., who had trouble with pipes connected to his boiler in under side: The trouble was that there was no connection with the steam. If one end of the pipe were connected with the steam, the steam generated would escape to the boiler and form a vacuum, and the water would follow. The size of the pipe makes no difference. It will not do to pump through such pipes.

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

C. H. W. Jr.—It is a fragment of a small hexagonal crystal of rock crystal or quartz.—G. H. M.—It is a decomposed muscovite, which is a variety of mica, and consists of a hydrated silicate of alumina, with a small percentage of oxide of iron and about 10 per cent of alkali. Numerous specimens of this mineral have been forwarded of late, probably on the supposition that the bright yellow scales owe their color to the presence of gold. This mistake was made with sad consequences by the first settlers at Jamestown, Va., who, instead of devoting themselves to cutting down the forest, collected a shipload of similar material and sent it to England, where it was pronounced worthless.—D.K.—No. 1 is bornite or variegated copper ore, composed of sulphur 25 per cent, copper 63 per cent, and iron 12 per cent. No. 2 is epidote, and consists of 37 per cent of silica, 23 per cent of alumina, 14 per cent of oxide of iron, 23 per cent of magnesia, and 3 per cent of water.—T. M. T.—It is a mixture of augite, epidote, and quartz. If it contains any tin ore, it is not perceptible to the eye, and a piece much larger than the microscopic fragment you send would be necessary to determine this fact. It has no value, apparently, as an ore.—N. H. S.—We have tried your specimen for manganese, and find it present, although in what quantity we cannot say from a preliminary examination. The cost of an assay is \$10; and if there is a deposit of the mineral, it is worth the assay.—G. McL.—The pill is probably a proprietary article; it has all the indications of being for sweetening the breath only.—J. K.—No. 1 is marcasite, and is composed of 46 per cent of iron and 54 of sulphur. It is not valuable as an iron ore. No. 2 is a clay slate, containing oxide of iron, but not in sufficient quantity to render it valuable. No. 3 is an impure steatite or soapstone. In large blocks, it is used in lining the interior of blast furnaces. No. 4 is a yellow oxide of iron, mixed with clay and a large amount of silice. It is an inferior iron ore.—Y. and K.—The specimen contains gold, of the variety known in works on minerals as "fool's gold," or iron pyrites. It is full of cubical crystals—slightly decomposed—of iron pyrites, which is a compound of sulphur and iron.—P. C.—The white particles are not sulphur, but sulphate of iron arising from the decomposition of pyrites. The vitriol has probably been made in the same manner, and a larger specimen would be needed for analysis.—An unlabeled mineral of a bright metallic luster, slight yellow tint, broken on the side with a fibrous fracture, and having an appearance at the ends of having undergone fusion, has been received. It is sulphure of iron.

J. & J. T. ask: What is the proper speed for the periphery of a bolting reel?—J. H. asks: How can I dye skins of muskrat, fox, etc., black?—R. M. asks: How can I prepare Prussian blue for stenciling, to be used, moistened with water, with a brush?—R. S. asks: What is a hit and miss valve?—J. C. C. asks: 1. How can ginger ale with a round, full, aromatic body be made? 2. What are the component parts of the Belfast ginger ale?—T. W. B. asks: If four men can pack a bale of cotton weighing 500 lbs. on an iron screw 4 inches in diameter and 1 1/2 inches pitch in the thread to the round, with levers 15 feet long, how much can four men pack with a wood screw 22 inches diameter and 7 inches pitch in the thread to the round, with lever, 20 feet long? The incline on the wood screw is as 7 to 60, and the incline on the iron screw is as 1 1/2 to 12 1/2, that is, the incline on both is nearly the same, but the rise on one is 7 inches to the round, and on the other 1 1/2 inches to the round.

COMMUNICATIONS RECEIVED.

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

- On Boiler Explosions. By W. H.
On a Mysterious Fire. By J. B. G.
On a Magnetic Engine. By H. L. C.
On Lubricating Cylinders. By J. H. S., and by C. T. S.
On an Optical Phenomenon. By C. E. F.
On Nitro-Glycerin as a Motor. By C. T.
On Amalgam Fillings. By F. H. H.
On a Man-Eating Tree. By K. L.
On Ants. By J. S.

Also enquiries and answers from the following: D. O.—M. P. C.—J. B. E.—J. E. B.—W. C. T.—A. F. A. F. O.—G. C. S.—B. C. L.—J. S. B.—J. W. R.—F. J. D.—J. F. F.—B. C. & Co.—D. F. S.—W. B. R.—E. E. E.—S. A. H.—P. E. V. H.—J. M. R.—W. H. S.—H. L. F. M.—B. J. J.—C. H. B.—W. M. H.—R. G. S.

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 enquiries analogous to the following are sent: "Who sells eccentric grinding mills? Who sells a gold plating liquid? Who sells match-

making machines? Who deals in fossils? Who makes pocket door locks? Who buys old coins?" All such personal enquiries 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

January 26, 1875,

AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

Table listing inventions and their patent numbers, including items like Air compressor, Aerating apparatus, Axle box and sleeve, Bale tie, Bale tie, A. A. Goldsmith, Balling cotton, device for, W. Her, Barrel, G. W. Banker, Barrel heads, cutting, O. Osten, Bed bottom, spring, Fowler & Dewar, Bee hive, J. S. Coe, Boats, towing, G. Burnham, Bolterfeeder, etc., J. W. Hopkins, Boiler, wash, S. M. Marsden, Boiler water indicator, O. B. Kendall, Boilers, etc., covering for, W. O'Hara, Bolt fastening, E. H. Pettit, Boot, gaiter, B. C. Young, Boot stiffeners, making, R. Rogers, Boring machine, G. Dryden, Bottle stopper, C. M. Blydenburgh, Bottle stopper, etc., F. B. Mitchell, Box, revolving spice, T. W. F. Smitten, Boxes, wooden, A. Robinson, Bracelet, E. F. Presbrey, Bridge, iron, E. I. Farnsworth, Bridges, joint for iron truss, E. S. Shaw, Bridge, post or girder, F. C. Lowthorp, Bridle bit, P. Casey, Bristles, combing, Parks & Lannay, Buildings, movable front for, J. Murphy, Burial casket, W. G. Algeo, Sr. & Jr., Burner, self-regulating gas, D. D. McMillan, Burners, lens for gas, M. C. Meigs, Button, sleeve, Mason & Richardson, Car birth, sleeping, C. E. Lucas, Car coupling, A. A. Kellogg, Car coupling, G. W. E. Row, Car coupling, Tuttle & Thompson, Car coupling, L. Vote, Car ventilator, E. Korting, Car wheel and axle, B. A. Berryman, Cars, truck for street railway, H. C. Bull, Carpet fastener, A. Burroughs, Carriage wheel fender, A. Shoemaker, Cartridge loading device, G. W. Ansley, Chain gripe, etc., J. N. & G. J. Ackerman, Chair, folding, P. W. Nolan, Cheese mill, J. F. Landis, Churns, cream saver for, R. Whiting, Cigar mold, N. Dubrul, Cisterns, walling, F. Wilford, Clasp for stockings, etc., G. J. Capewell, Clock frame or case, H. J. Davies, Clothes line, T. S. Cary, Connecting rod, J. F. Haskins (r), Crop thinning machine, M. Eustace, Croquet mallet, T. H. Logan, Cutter head, G. J. Shimer, Dairies, cooling, J. Wilkinson, Demijohn, C. Newman, Dental engines, protecting, E. T. Starr, Dental plugger, L. J. P. E. Gaillard, Dental tool, electromagnetic, G. F. Green, Derrick, C. L. Duroy, Ditching machine, T. F. Randolph, Dredging machine, C. J. Sands, Drilling machine, rock, E. S. Winchester, Drill supporting clamp, E. S. Winchester, Dryer for fertilizers, Bowman & Chapman, Egg holder, A. W. Porter, Engine, rotary, J. V. Beekman, Engine, rotary, Deming & Wickes, Engine cut-off, H. Webster, Fan, F. Schmidt, Feather renovator, Russell & Seamans, Felt, vegetable, Sweeney & Beach, Fence, farm, I. L. Landis, Fifth wheel for vehicles, G. F. Putnam, Fire extinguisher, H. S. Parmelee (r), Flue cover, H. Tongue, Furnace boiler, W. Allensworth, Furnace doors, etc., opening, G. Lees, Furnace grate, C. Knoblauch, Furnace grate, H. Ryder (r), Furnace, metallurgical heating, R. Ragot, Furnace, puddling, H. Ragot, Furnace, smoke-consuming, Argerbright et al., Furnace steam distributor, A. B. Corey, Gas light indicator, etc., W. W. Goodwin (r), Gas machine, J. C. Henderson, Gas meter register, H. H. Edgerton (r), Gas regulator, J. Anderson, Gear wheels with shafts, connecting, J. Rosebrook, Generator, steam, Whittingham (r), Generator, steam, R. C. Bull, Generator, steam, W. E. Haxtun, Glass articles, etc., mold for, T. B. Atterbury, Glass mold, B. Bakewell, Jr., Grain binder, J. M. Groover, Grain dryer, H. H. Beach, Grain, hulling and scouring, L. S. Chichester, Grain for grinding, moistening, W. M. Kennedy, Harrow and planter, B. Butler, Harrow and roller, W. R. Downing, Harvester, cotton, L. K. Miller, Hat block, F. R. Going, Heater radiator, steam, C. Comstock, Heater, water, S. L. Latta, Hog trap, J. Klar, Hoist or elevator, cellular, C. D. Walters, Horse power, J. M. Albertson (r), Horseshoe, R. Lec, Hygroscope, Seebass & Simon, Inhaler and nasal douche, E. Schofield (r), Ironing board, S. B. Morrell, Jack, lifting, W. F. Morrow, Jewer's lathe, N. W. Holt

Table listing inventions and their patent numbers, including items like Kiln, brick, W. Bull, Kiln, brick, W. L. Gregg, Ladder, fire escape, M. Davis, Ladder, step, R. S. Van Zandt, Lamp cap and shade holder, W. R. Park, Lamp wick inserter, W. H. Fitz Patrick, Leather, stretching, C. D. Castle (r), Leather, finishing, Groff & Marvel, Lens attachment for gas burners, M. C. Meigs, Letter box indicator, H. R. David, Liquids, drawing effervescent, T. Warker, Lock, alarm, J. Walton, Loom temple, E. S. Stimson, Map exhibitor, S. C. Adams, Metal-creasing machine, G. W. and C. P. Howell, Meter, W. R. Baker, Mill, rolling, Chalfant and Hahn, Millstones, dressing, J. Williams, Motor for light machinery, D. Baldwin, Mower, lawn, H. T. West, Music leaf turner, W. H. King, Musical merchandise box, J. Restein, Nail-sorting machine, J. Coyne, Newspaper heads, changing, P. Forsyth, Nursing bottle, J. L. Mason, Nut lock, J. J. Adgate, Ordnance, breech-loading, G. H. Felt, Ore concentrator, Moore and Campfield, Ox shoe, R. French, Paddle wheel, feathering, B. Vater, Paper bag, T. W. Grinter, Paper bag machine, T. W. Grinter, Paper ruling machine, T. F. Collins, Pavement, wood, W. Disney, Pawl and ratchet, Tomlinson and Smith, Pawl and ratchet mechanism, J. L. Bond, Photograph burnisher, A. C. Moestue, Piano lid prop, D. P. Ramsdell, Picture exhibitor, C. S. Mills, Picture rod molding, A. C. Funston, Pipes, molding clay, W. K. Black, Planter, rice, J. C. Braud, Planter, seed, J. G. Garner, Planters, check cord for, G. D. Haworth, Plow, G. Hale, Pocket tool, F. R. Woodward, Printing, gelatin plates for, E. Edwards, Printing, etc., photo relief, Levy and Bachrach, Pruning implement, E. E. Stodman (r), Pulleys, disk for casting, W. Hutton, Pump, A. A. Burr, Pump bucket, chain, J. Nell, Quicksilver strainer, H. H. Oakes, Quilting frame clamp, A. P. Grabham, Radiator, steam heater, C. Comstock, Railway crossing, J. Cumming, Sash holder, H. C. Perry, Sash supporter, H. F. Jenks (r), Saw handle, E. Andrews, Saw mill head block, Whitcomb and Rawson, Scaffold, Lapp and Sweet, Scarf, A. Mueller, Seeding machine, C. E. Patric, Sewing machine, Bartlett and Plant, Sewing machine, E. Kappmeyer, Sewing machine ruffler, E. W. Darby, Sewing machine table support, R. W. Whitney, Sewing machine wax thread, E. E. Bean, Shaft support, S. Nellis, Sheep scratch box, L. B. Dillon, Shoe blacking case, C. P. Ellis, Shoe horn, A. M. Cushing, Shoe nail blank, Blake and McKay, Shoe tips, machinery for forming, J. H. Huesey, Sleigh, T. F. Moore, Spark arrester, D. Allard, Spark arrester, J. W. Buel, Spinning frame, bolster, J. A. Matteson, Spoke socket and felly plate, H. T. Briggs, Spooling machine bobbin supporter, A. M. Wade, Staple blanks, making, J. W. Shannon, Stone, wheel for dressing, P. B. Laird, Stool support, C. J. Woodward, Stove, cooking, M. D. Seward, Stove, heating, N. A. Boynton (r), Stove lid lifter, G. Sprague, Stove, magazine, J. E. Tallmadge, Stove pipe collar and thimble, G. F. Brinkerhoff, Stove polish, S. J. Wilson, Strainers, construction of, R. J. P. Goodwin (r), Street sprinkler, A. Jeremiah, Street sweeping machine, J. Edson, Surveyors, target for, T. Davies, Syringe, hypodermic, J. Leiter, Table, folding, H. B. Sinclair, Tea pot handle, T. Shaw, Telegraph pole, metallic, R. D. Radcliffe, Tiles, manufacturing, E. L. Hall, Tobacco, coloring, O. Knab, Toy cartridge exploder, J. B. McHarg, Trap, animal, L. F. George, Trunk fastener, A. Frankel, Twine cutter, C. P. Ellis, Tyre tightener, H. B. Robbins, Umbrella, W. Tetley, Valve, automatic relief, L. D. Shaw, Valve, safety, H. C. Bull, Valve, safety, G. H. Crosby, Valve, steam, J. H. Corey, Valve, steam, G. McNaughton, Valve, adjusting cut-off, H. C. Bull, Vehicle wheel, J. M. Stephenson, Vehicle wheel hub, W. Teegarden, Velocipede, J. A. Vander Waag (r), Ventilating and warming drum, P. H. Carnan, Ventilator, car, E. Korting, Vise, E. Parker, Wagon bodies, stay iron for, A. A. Livingston, Wagon, dumping, Patton and Walters, Wagon jack, S. Chard, Washers, machine for forming spiral, S. Trethewey, Washing machine, S. W. Holbrook, Watchcase bezels, making, F. H. Wilby, Water, removing obstructions under, S. Lewis (r), Wells, increasing capacity of oil, E. A. Roberts (r), Whip tip ferrule, E. B. Light, Windmill, W. D. Parson, Wood, machine for polishing, S. G. Randall, Wrench, S. E. Robinson, Wrench, pipe, H. C. Stouffer, Wrench, pipe, J. B. Westwick, Yoke, neck, J. B. Relyea

TRADE MARKS REGISTERED. 2,145.—WASHING SODA.—Fischer & Co., New York city. 2,186.—DRUGS.—E. Fougera & Co., New York city. 2,187.—CARPET TACKS.—F. F. McNair, Nunda, N. Y. 2,188.—JEANS.—Naumkeag Cotton Co., Salem, Mass. 2,189.—HAMS.—C. D. Sabin, New York city. 2,190.—WOOL.—J. H. Smith, Philadelphia, Pa. 2,191.—MINERAL WATERS.—H. A. Benjamin, San Francisco, Cal. 2,192.—BRAIDS.—H. N. Daggett, Attleborough, Mass. 2,193.—SILKS, ETC.—Passavant & Co., New York city. 2,194.—SOAPS.—Strunz et al., Pittsburgh, Pa. 2,195.—SPRING BEDS.—Tucker Man. Co., Boston, Mass. 2,196.—KNITTED GOODS.—Troy Hosiery Co., Troy, N. Y.

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CANADIAN PATENTS. LIST OF PATENTS GRANTED IN CANADA, JANUARY 25 TO JANUARY 28, 1874.

Table listing Canadian patents, including items like 4,307.—H. H. Rhodes, San José, Santa Clara county, Cal., U. S. Improvements in railroad car axles, called "Rhodes' Railroad Car Axle." Jan. 25, 1875. 4,308.—W. Gooding, Detroit City, C. Spalding and A. Winchester, Windsor, Essex county, Ont. Improvements on apparatus for elevating and conveying coal, called "The Shipping Coal Elevator." Jan. 25, 1875. 4,309.—A. J. O'Day, Elk Rapids, Antrim county, Mich., U. S. Improvements in ore crushing and rock breaking machines, called "O'Day's Improved Ore Crusher." Jan. 25, 1875. 4,310.—G. M. Holmes, Gardener, Kennebec county, Me., U. S. Improvements in mechanism for planing the cogs of bevel gear wheels, called "Holmes' Gear Wheel." Jan. 25, 1875. 4,311.—Wm. Hamilton, Fallsburg, Sullivan county, N. Y., U. S. Improvements in machine for making animal shoes, called "Hamilton's Machine for Making Animal Shoes." Jan. 25, 1875. 4,312.—J. Prince, Rock Island, Stanstead county, P. Q. Improvements on an apparatus for cooling milk, called "Prince's Improved Milk Vat Pan." Jan. 25, 1875. 4,313.—D. Allard, St. Albans, Franklin county, Vt., U. S. Improvements on smoke stacks, called "Allard's Smoke Stack." Jan. 25, 1875. 4,314.—C. E. Moyer, Berlin, Waterloo county, Ont. Improvements on shoe lasts, called "Moyer's Improved Patent Felt Shoe Last." Jan. 26, 1875. 4,315.—J. K. Felck, Berlin, Waterloo county, Ont. 1st extension of No. 2,234, on "Felck's Patent Last." Jan. 26, 1875. 4,316.—J. K. Felck, Berlin, Waterloo county, Ont. 2d extension of No. 2,234, on "Felck's Patent Last." Jan. 26, 1875. 4,317.—H. Sappe, New York city, N. Y., U. S. Improvements on faucets, called "Sappe's Self Closing Faucet." Jan. 26, 1875. 4,318.—Wm. Crich, Tuckersmith township, Huron county, Ont. Improvement on spring bed bottom, called "Crich's Improved Spring Bed." Jan. 26, 1875. 4,319.—L. Dion and A. Dion, St. Thomas, Montgomery county, P. Q. Unattelage de wagon de chemin de fer, dit "Attelage de Wagon de Dion & Fils." Improvements in railway car couplers. 4,320.—J. F. Webster, Hamilton, Wentworth county, Ont. A leaf supporter for sewing machines, called "Webster's Leaf Supporter." Jan. 25, 1875. 4,321.—R. Sylvester, Enniskillen, Durham county, Ont. Improvements in spring hoe seeding machine, called "Sylvester's Improved Spring Hoe." Jan. 26, 1875. 4,322.—E. C. Scarlett, Adolphustown, Lennox county, Ont. Improvements in the manner of coupling and uncoupling railroad cars, called "Scarlett's Car Coupling." Jan. 26, 1875. 4,323.—S. J. Wright, Madrid, and A. H. Wood, Ogdensburg, St. Lawrence county, N. Y., U. S. Improvement on watchman's patrol register, called "Wright & Wood's Watchman's Permanent Control Clock." Jan. 26, 1875. 4,324.—R. H. Atwell, Baltimore, Md., U. S. Improvements on motors or engines to be driven by either water or steam, called "Atwell's Motor for Steam or Water." Jan. 28, 1875. 4,325.—G. A. Jasper, Boston, Suffolk county, Mass., U. S. Improvements in methods for promoting the combustion of fuel in furnaces, called "The Jasper Furnace." Jan. 28, 1875. 4,326.—J. Conrad and J. H. Fahringer, Montoursville, Lycoming county, Pa., U. S. Improvements on apparatus for elevating building materials, called "Conrad's and Fahringer's Apparatus for Elevating Building Material." Jan. 28, 1875.

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