

CATARH AND ITS CURE.

Rev T P Childs publishes to-day a wonderfully accurate description of the causes of catarrh, and the results of an inattention to the first symptoms of this terrible disease. From the details given of his method of cure, it seems to be easily applied and very simple in its action. Inhalation is evidently the most rational and sensible way of reaching any disease of the air passages; Mr Childs' application of this principle in medicine, together with the knowledge of the inhalants to be used, have given him his wonderful success in the treatment of Catarrh and Bronchitis. To judge from the published statements of some of his patients, the medicine Mr Childs contrives to place, by the use of his inhalers, just where it is needed, must be most powerful and searching in its character to produce such surprising results. None need feel any hesitancy in placing their case in Mr Childs' hands for treatment. The number and character of the certificates, as well as the favorable notices from well known publishers, who have carefully examined the subject, must dispel every doubt in regard to his reliability. We would call especial attention to the advertisement, and request a careful perusal of the facts as set forth.—Adv

Business and Personal.

The Charge for Insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in next issue.

National Steam Pump; best and cheapest. National Iron Works, New Brunswick, N. J.

Assays of Ores, Analyses of Minerals, Waters, Commercial Articles, etc. Technical formulae and processes. Fuller & Stillman, 40 & 42 Broadway, N. Y.

Kimball's Catarrh Cigarettes, an instantaneous relief and a pleasant smoke. They contain no tobacco.

80 H. P. Corliss Engine for sale low, by J. F. Bishop, New Haven, Conn.

The greatest improvement upon Turbine Water Wheels has recently been made by S. M. Smith, York, Pa.

C. M. Flint, Fitchburg, Mass., Mfr. of Saw Mills and Dogs, Shingle and Clapboard Machines. Circulars.

Wood-working Machinery, Waymouth Lathes. Specialty, Wardwell Patent Screw Bench; it has no equal. Improved Patent Planers; Elevators; Dowel Machines. Rollstone Machine Company, Fitchburg, Mass.

Valves and Hydrants, warranted to give perfect satisfaction. Chapman Valve Manuf. Co., Boston, Mass.

Artificial Stone.—Wanted to buy receipt for making. Address Wm. A. Morrison, Alton, Ill.

New Gear Cutting Attachment for Lathes. Lace Leather Cutter. Something new. Send for lists. Jackson & Tyler, Baltimore, Md.

Outfits for Nickel and Silver Plating, \$5 to \$200. Union Silver Plating Company, Princeton, Ill.

Send for Circulars of Indestructible Boot and Shoe Soles to H. C. Goodrich, 40 Hoyne Ave., Chicago, Ill.

For Sale cheap.—3 H. P. Yacht or Stationary Engine and Boiler, good as new. Aug. Franke, Wapakoneta, O. Cornice Machines; Parkin's Circular. Calvin Carr, 44 Center St., N. Y.

Save Fuel by using Steam Boiler Damper Regulator. National Iron Works, New Brunswick, N. J.

Emery.—Best Turkey Emery in bbls., kegs, and cases in quantities to suit. Greene, Tweed & Co., 18 Park Place, N. Y.

The unprecedented demand for Kinney Bros.' New Cigarette, Sweet Caporal, is a good recommendation as to their merit.

Kinney Bros.' New Cigarette, Sweet Caporal, fine, mild, and sweet, are becoming extremely popular everywhere.

Wanted.—Information of any improved method or machinery for making Vinegar. Address 909 N. 23d St., St. Louis, Mo.

Want—3 Singer Sewing Machines; 1 Watchman's Time Detector. Address Millstone, Indianapolis, Ind.

Nearly five acres of woodwork in the two immense dry goods stores of Messrs. A. T. Stewart & Co., of this city, are protected with H. W. Johns' Asbestos Fire-proof Paint. H. W. Johns Mfg. Co., 87 Maiden Lane, are sole manufacturers of genuine Asbestos Paints, Roofing, Boiler Coverings, etc.

Brown & Sharpe, Prov., R. I. Best Gear Teeth Cutters and Index Plates at low prices. Send for catalogue.

For Sale.—Brown & Sharp Universal Milling Machine; Bement Profiling Machine; first-class 2d hand Machine Tools. E. P. Bullard, 14 Dey St., New York.

Latest Improved Nut and Washer Machines under J. Noyes Smith's Patents; the only machine that makes hot pressed nuts without burring. York & Smith, Cleveland, Ohio.

For Sale.—7 foot bed Putnam Planer, \$350. A. A. Pool & Co., Newark, N. J.

Blake's Belt Studs; strongest, cheapest, and best fastening for Leather or Rubber Belts. Greene, Tweed & Co., New York.

Post Hand, Foot, or Power Band Saws, as good as the best, cut 7 1/2 in. thick; price \$35. G. W. Baker, Wil., Del.

Wanted.—By a first-class practical mechanic, draughtsman, and designer, a situation as foreman or superintendent of a machine shop. First-class references given. Address Lock Box 263, Woonsocket, R. I.

Our Imp. Steam Governor is far in advance of all others; prices reduced. Huntoon Gov. Co., Lawrence, Mass.

Bevins & Co.'s Hydraulic Elevator. Great power, simplicity, safety, economy, durability. 94 Liberty St., N. Y.

Circulars for Inventors and Manufacturers. Pamphlets on machinery, price lists, etc., written, illustrated, and printed; estimates furnished. Park Benjamin, Ph. D., Editor Appleton's "Cyclopaedia of Applied Mechanics," 37 Park Row, New York.

A Cupola works best with forced blast from a Baker Blower. Wilbraham Bros., 2,318 Frankford Ave., Phila. Shaw's Noise Quieting Nozzles and Mercury Pressure Gauges. T. Shaw, 915 Ridge Ave., Philadelphia, Pa.

For Steam Pumps send to Dean Bros., Indianapolis, Ind. For Solid Wrought Iron Beams, etc., see advertisement. Address Union Iron Mills, Pittsburgh, Pa., for lithograph, etc.

Vertical Burr Mill. C. K. Bullock, Phila., Pa. H. Prentiss & Company, 14 Dey St., N. Y., Manufs. Taps, Dies, Screw Plates, Reamers, etc. send for list.

A Great Bargain.—One new No. 1 14-inch 6 Roll Schenck Planing and Matching Machine. Belcher & Bagnall, 25 Murray Street.

Needle Pointed Iron, Brass, and Steel Wire for all purposes. W. Crabb, Newark, N. J.

Case Hardening Preparation. Box 73, Willimantic, Ct.

Hydraulic Elevators for private houses, hotels, and public buildings. Burdon Iron Works, Brooklyn, N. Y. Presses, Dies, and Tools for working Sheet Metal, etc. Fruit & other can tools. Bliss & Williams, B'klyn, N. Y.

Nickel Plating.—A white deposit guaranteed by using our material. Condit, Hanson & Van Winkle, Newark, N. J.

Galland & Co.'s improved Hydraulic Elevators. Office 206 Broadway, N. Y., (Evening Post Building, room 22.)

The Lathes, Planers, Drills, and other Tools, new and second-hand, of the Wood & Light Machine Company, Worcester, are to be sold out very low by the George Place Machinery Agency, 121 Chambers St., New York.

Hydraulic Presses and Jacks, new and second hand. Lathes and Machinery for Polishing and Buffing Metals. E. Lyon & Co., 470 Grand St., N. Y.

Solid Emery Vulcanite Wheels.—The Solid Original Emery Wheel—other kinds imitations and inferior. Caution.—Our name is stamped in full on all our best Standard Belting, Packing, and Hose. Buy that only. The best is the cheapest. New York Belting and Packing Company, 37 and 38 Park Row, N. Y.

Telescopes of all sizes manufactured; also telescopes carefully corrected and repaired at short notice. I have testimonials from Lewis M. Rutherford, 175 2d Ave., N. Y., certifying to the perfection of my telescopes. John Byrne, 314 E. 21st St., New York.

Warranted best and cheapest Planers, Jointers, Universal Woodworkers, Band and Scroll Saws, etc., manufactured by Bentel, Margedant & Co., Hamilton, Ohio.

Machine Diamonds, J. Dickinson, 64 Nassau St., N. Y.

Eagle Anvils, 9 cents per pound. Fully warranted.

The best Friction Clutch Pulley and Friction Hoisting Machinery in the world, to be seen with power applied, 95 and 97 Liberty St., New York. D. Frisbie & Co., New Haven, Conn.

Fine Taps and Dies for Jewelers, Dentists, and Machinists, in cases. Pratt & Whitney Co., Hartford, Conn.

For Sale.—4 H. P. Vertical Engine and Boiler (New York Safety Steam Power Co.'s make), as good, and in some respects better, than new. Address H. M. Quackenbush, Herkimer, N. Y.

The new "Otto" Silent Gas Engine is simple in construction, easy of management, and the cheapest motor known for intermittent work. Schleicher, Schumm & Co., Philadelphia, Pa.

Improved Steel Castings; stiff and durable; as soft and easily worked as wrought iron; tensile strength not less than 45,000 lbs. to sq. in. Circulars free. Pittsburg Steel Casting Company, Pittsburg, Pa.

Dead Pulleys that stop the running of loose pulleys and their belts, controlled from any point. Send for catalogue. Taper Sieve Pulley Works, Erie, Pa.

Vick's Illustrated Monthly Magazine is one of the most beautiful magazines in the world. Each number contains a chromo of some group of flowers, and many fine engravings. Published monthly at \$1.25 per year. Address James Vick, Rochester, N. Y.

Pulverizing Mills for all hard substances and grinding purposes. Walker Bros. & Co., 23d & Wood St., Phila., Pa.

Inventors' Models. John Ruthven, Cincinnati, O.

Sheet Metal Presses, Ferracute Co., Bridgeton, N. J.

The SCIENTIFIC AMERICAN Export Edition is published monthly, about the 15th of each month. Every number comprises most of the plates of the four preceding weekly numbers of the SCIENTIFIC AMERICAN, with other appropriate contents, business announcements, etc. It forms a large and splendid periodical of nearly one hundred quarto pages, each number illustrated with about one hundred engravings. It is a complete record of American progress in the arts.

NEW BOOKS AND PUBLICATIONS.

GUIDE TO ROSE CULTURE.—The Dinger & Conard Company of West Grove, Penn., have just issued their 1879 Annual, and like their previous ones it is copiously illustrated. It not only contains engravings of the choicest varieties of roses, but also of other flowering and ornamental plants. Messrs. Dinger & Conard have been growers of fine varieties of roses and ornamental plants for a number of years, and are reliable dealers. The guide is sent free to persons inclosing, with their address, a 3 cent stamp.



(1) C. Z. S. asks for the best method of putting water grates in a locomotive fire box. How is the pipe connected with the front and back end of the fire box? A. You can either expand the pipes at the ends, or screw them in, as is most convenient.

(2) A. S. asks how many sizes of pinions will run in an internal gear of 10 inches diameter. I want to run 24, the smallest three quarters of an inch, the largest 3 inches diameter. A. Fix upon some number of teeth in the internal gear that is a common multiple of the number of teeth in all the pinions. You will see then that the number of pinions is only limited by the practical difficulties of construction.

(3) R. B. R. writes: Several journals have stated that the locomotive lately built for the Atchison, Santa Fe, and Topeka Railroad was the heaviest ever built. The weight given is 118,000 lbs. Please inform your readers if this is correct. A. The "Janus," built at the Mason Machine Works, and in use on one of the Pennsylvania coal roads, weighs 84 tons. Possibly there may be an engine heavier still, and if so, we hope some of our readers will inform us.

(4) D. P. asks: What thickness must a cast steel cylinder 8 inches internal diameter have, so as to resist a steam pressure of 350 lbs. per square inch with complete safety? A. Half an inch will answer, unless the length is great.

(5) R. S. H. asks: If I build a boiler 36 inches in diameter, and the flues 30 inches in diameter, the iron in both being the same strength, and apply the

steam between the boiler and the flue, which will bear the greatest amount of pressure? A. The 36 inch shall.

(6) C. R. G. asks (1) if there is any difference in the friction of 2 equal lengths of hose, one to be laid straight and the other crooked. A. Yes, other things being equal, the difference will be considerable. 2. If water is forced into a 6 inch pipe from a 3 inch inlet, and after being forced from 500 to 600 feet and discharged from a 3 inch hose, will the water move faster in the center of the 6 inch pipe, or on the sides of the same, or will the water that is forced in act as a piston and make it all move the same? A. The action will be as described in the latter part of your question.

(7) R. E. W. asks for an explanation of the action of the wheels of a car when going round a turn or curve. One of the wheels (I think the outside) must make more revolutions in the same time than the other. How does the slower one make up with the other? A. In such a case, one of the wheels must slip, unless they are so coned that one is running on a longer circumference than the other, sufficient to allow it to pass over a greater distance with the same number of revolutions.

(8) C. H. M. H. asks: What constitutes an artesian well? My friend argues that it is necessary that the water should rise above the surface of the ground. I contend that if it reaches the surface it comes under the head of an artesian. A. It is the manner of sinking, not the nature of the flow, that makes a well artesian. The water may or may not reach the surface.

(9) J. E. F. asks: Which is the best for the Wabash, Mississippi, and Yellowstone rivers, a screw wheel, stern wheel, or side wheels? I am building a boat thirty-five feet long to carry eight persons and baggage, and I want to run good speed, for a pleasure trip up the Yellowstone river. What size should the engines be, and what should the boiler be, and would thirty-five feet be long enough, and how wide should it be? A. A screw will be preferable, if there is sufficient water. For dimensions of machinery, see SCIENTIFIC AMERICAN SUPPLEMENT, No. 158.

(10) W. C. asks: 1. Will it take the temper out of a steel casting or weaken it, under necessary heat to "shrink it on"? A. Yes. 2. In case it does, can a casting be "shrunk on" and tempered at the same time, or under one heating? A. Yes, but at the risk of breaking it.

(11) J. A. M. asks how to soften cast iron that is too hard for filing or drilling, so that it may be filed or drilled. A. Heat it to a cherry red, plunge it into powdered quick lime, and allow it to remain until cool.

(12) W. G. C. asks: 1. How can I drill a hole in a glass plate without danger of cracking the glass? A. Use as a drill a copper tube of the size of the required hole, and as it rotates keep it charged with emery and water. 2. Is American glass good enough for the plate of a "Holtz" electric machine? A. Yes. State your other questions more fully.

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

C. S. W.—The ore does not contain silver, but much manganese and iron oxide. Properly powdered and washed it may have some market value on account of the manganese oxide which it contains.—J. E. R.—It is a fragment of quartz, or pebble that has been rounded by attrition.—E. G. O.—Please send larger sample of your ore.

Any numbers of the SCIENTIFIC AMERICAN SUPPLEMENT referred to in these columns may be had at this office. Price 10 cents each.

COMMUNICATIONS RECEIVED.

- On Pyrometers. By C. F. R.
Simple Electric Pen. By G. L. S.
Tide in Lake Superior. By H. J. W.
Culture of the Pear. By E. P. P.
New Patent Bill. Inventor.
On Ice Yachts. By H. B.
The Senate Patent Bill No. 306.
Patent Legislation. By W. F. S.
On the Progress of Chemistry in 1878. By E. G. H.
On Protection of Inventors' Rights. By V. B.
On Improvements in Cane Mills. By H. M. W.

OFFICIAL.

INDEX OF INVENTIONS

FOR WHICH Letters Patent of the United States were Granted in the Week Ending February 4, 1879, AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

A complete copy of any patent in the annexed list, including both the specifications and drawings, will be furnished from this office for one dollar. In ordering, please state the number and date of the patent desired, and remit to Munn & Co., 37 Park Row, New York city.

Table listing various inventions and their patent numbers, including items like Accordion, Alloy for metric gold coin, Amalgamator and settler, Anglemeter, Automatic gate, Axle box lid, Bag lock, Baggage fastener, Bait hook, Bale tie, Bale tie, Barrel crozing machine, Barrel trussing machine, Bath tub, Bathing apparatus, Bed bottom, Bedstead, Bee hive, Binder, Bolt holder, Book cover protector, Boot and shoe heel attachment, Boot and shoe stretcher, Boots, manufacture of, Bottle stopper fastener, Bottles, removable nozzle for, Box fastener, Bran, treating, Bridle winker, Bronzing wood, Broom stock holder, Buggy seat, Burglar alarm, Button, Button, Caster for metals, Chimney holder and air distributor, Chuck, lathe, Churn lid, Clay and cement pipes for drains, Clock pendulum adjustment, Clock winding attachment, Cloth presser, Clothes drier, Coal assorter and washer, Copies of writing, Corn dropper and check rower, Corpse cooler or casket, Croquet scorer, Cultivator and corn planter, Curtain fixture, Cut-off and valve, waste pipe, Cutters, shaper for, Cylinder lubricator, steam, Dog power, Draught bar for sleighs, Draw bar, Drawing frame, Drying machine, centrifugal, Egg boiler, Egg preserver, Electric light regulator, Electro-magnetic engine, Feeding sheep, Fence barb, wire, Fence, barbed, Fence, iron, T. Rogers, Fence, metal, Filter, C. Mæurer, Firearm magazine, Fire escape, Fire extinguisher, Flue cutter, Fluid motor or motor engine, Fork and spoon, Gas engine, Gaslight extinguisher, Gas, illuminating, Gearing, differential, Glove show case, Grain separator, Grate, Grinding mill, T. Bowman, Grinding mill, W. Peck, Grinding mill, A. H. Wagner, Gun, machine, Hame loop, Harrow, E. Murray, Harrow, adjustable, Harvester rake, L. Miller, Harvester rake attachment, Harvesting machine, Hat presser, Heater, steam, Hinges, gravity catch for, Hoisting register, Honey box for bee hives, Horse boot and weight, Horse toe weight, Horseshoe, R. Pruessing, Horseshoe pad, Horseshoer's rasp, Hose, electric signal fire, Hot air bath apparatus, Hot air register, Hub attaching device, Hub, vehicle wheel, Hulling machine, Kettle, steaming, Key box, safety, Knitting machine loop wheel, Ladder, combination, Lamp, W. M. Jackson, Lamp, F. Rhind, Lamp extinguisher, Lamp, paraffine or mineral oil, Lantern, carriage, Latch, J. Kinzer, Lawn sprinkler, Leather cutter, Lifting jack, Lightning rod, Liniment, R. Banes, Lock, Brooks & Mungler, Lock, Smith & Egge, Lock and latch, Loom, circular, Loom for weaving pile fabrics, Mainspring safety device, Marble veneering, Metallic and non-metallic box, Micrometer screw gauge, Mill staff gauge, Moulding tubular articles, Motor, Molera & Cebrian, Motor engine, Mower, Mower, W. D. Paxton, Mowing machine, Oil, rubber, Ore separator, P. Plant, Ore washer and amalgamator, Ordnance lining tube, Organ, pipe, Oven, shelf, Packing, piston, Packing, piston rod, Paddlewheel, feathering, Padlock, permutation, Paint and oil drier, Paper bag machine, Paper folder, Paper, manufacture of, Beehive, D. W. Smith.