

a monograph on the subject is timely and will meet with full appreciation. Levers, tackle, windlasses, hydraulic machinery, cranes and shears, excavators and dredges and pile drivers are samples of the subjects included in this work.

THE ART OF PRESERVING HEALTH. Outlines of practical hygiene adapted to American conditions. By C. Gilman Currier, M.D. 1893. New York: E. B. Treat. Pp. 468. Price \$1.75.

The contents of this work indicate a very full scope. Nothing appertaining to practical hygiene seems foreign to it. Ventilation, food, water, plumbing and sewage, diseases, bacteriology, infection and disinfection are among the topics which it treats.

Beautiful Calendar.—Messrs. Styles & Cash, ornamental printers and stationers, corner of Fourteenth Street and Eighth Avenue, New York, issue every year very handsome calendars, which they present to their customers and friends on the first of January with their greetings.

The "Columbia" desk calendar of the Pope Manufacturing Company is received. It is a pad calendar having space for memoranda for each day of the year, but a portion of each day's leaflet tells something of the advantages of bicycles, and especially of the well known Columbia wheel.

Any of the above books may be purchased through this office. Send for new book catalogue just published. MUNN & CO., 361 Broadway, New York.

SCIENTIFIC AMERICAN BUILDING EDITION.

JANUARY, 1894.—(No. 99.)

TABLE OF CONTENTS.

- 1. Elegant plate in colors showing a suburban dwelling at Bridgeport, Conn., recently erected for L. D. Plumb, Esq., at a cost of \$4,500 complete. Floor plans and perspective elevation. An excellent design. Mr. C. T. Beardsley, architect, Bridgeport, Conn.

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 the following week's issue.

The new material, "Linenoid," Westfield, Mass. "U. S." metal polish. Indianapolis Samples free. Stave machinery. Trevor Mfg. Co., Lockport, N. Y. For mud dredging engines. J. S. Mundy, Newark, N. J. Improved iron planers. W. A. Wilson, Rochester, N. Y.

Pipe frame truck baskets, steel and wooden trucks, etc. L. M. Moore, Rochester, N. Y. See page 399. Steam Hammers, Improved Hydraulic Jacks, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

The best book for electricians and beginners in electricity is "Experimental Science," by Geo. M. Hopkins. By mail, \$4; Munn & Co., publishers, 361 Broadway, N. Y.

Send for new and complete catalogue of Scientific and other Books for sale by Munn & Co., 361 Broadway, New York. Free on application.

Notes & Queries

HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters, or no attention will be paid thereto. This is for our information and not for publication. References to former articles or answers should give date of paper and page or number of question.

(5699) H. C. writes: I have a two cell electroplating battery. When I want to plate a wax matrix I am unable, after brushing same with black lead, to make it a conductor.

(5700) J. F. writes: 1. I have a magneto machine that was used on a telephone circuit. Will you please tell me whether I can use it to run a small model of an electric motor?

(5701) A. W. writes: 1. In SCIENTIFIC AMERICAN of October 28, Notes and Queries, No. 5442, you say a 14 inch wheel, 26 pitch, but do not mention number of blades; please do so, as I do not know the kind of wheel to get until then?

(5702) W. R. L. asks: In microphone transmitters there seems to be a great diversity of opinion as to the why. Some say it is the variable pressure, others the movable contact, or the heat generated, etc.

best, or are they both best according to the manner of use? A. Variations in resistance, due to more or less contact between the surfaces, is the "why" of it.

(5703) G. F. H. writes: 1. What is the reason that in an incandescent electric lamp of 50 volts you unscrew the globe and touch the standard of two of them, the shock does not feel as strong as in a common 2 volt cell battery?

(5704) V. G. A. asks what Chatterton's compound is. A. Chatterton's compound is made of—Stockholm tar..... 1 part. Resin..... 1 part. Gutta percha..... 3 parts.

(5705) F. J. T. asks: 1. What is the depolarizer used in bichromate batteries? A. The chromic acid of the alkaline bichromate.

(5706) S. S. D. says: Will you please tell me how to make a good composition for printers' rollers? A. Best glue..... 10 1/2 lb. Black molasses or honey..... 2 1/2 gal.

(5707) G. F. T. asks (1) how to make a good solder for mending tinware, one that does not require acid to solder with if possible.

(5708) L. S. F. asks: Practically, how close to the wind can a first class yacht sail? That is, what is the minimum angle between the yacht's path and the direction of the wind, allowance being made for leeway?

(5709) L. E. R. asks: 1. Is there any known substance that will dissolve carbide of silver? A. If such a compound were produced, it would probably dissolve with decomposition in nitric acid.

(5710) G. L. R. asks: Please answer in your Notes and Queries (1) how the compass is kept from being attracted by the mass of steel around on the man-of-war?

(5711) M. S. P. asks: How many cells of storage battery are required to run the electric motor described in SUPPLEMENT, No. 641, also the number and size of the plates in each cell of storage battery?

be accelerated. We advise not less than 20 gravity cells in 4 series of 5 each.

(5712) H. O. G. asks: What will clean a boiler of lime where you carry 15 pounds of steam to heat a building without injuring the boiler?

(5713) N. A. W. asks: It is quite generally known that carbonic acid gas is deathly poisonous, and we are also told that carbonic acid gas gives the palatable, sparkling, and exhilarating taste to champagne, beer, etc.

TO INVENTORS.

An experience of forty-four 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

January 9, 1894,

AND EACH BEARING THAT DATE.

(See note at end of list about copies of these patents.)

Table listing inventions with patent numbers and names of inventors. Includes items like: Address labels, machine for attaching, A. Heim... 512,926; Asphalt, refining, H. D. Upham... 512,434; Auger handle, D. W. Meacham... 512,384; Auger, post hole, A. De Witt... 512,540; Automatic lubricator, Slater & Barrett... 512,402; Axle cutting machine, C. H. Woodall... 512,426; Bale tie machine, W. A. Laidlaw... 512,617; Baling press, J. Heaton... 512,294; Ball, See Billiard ball... 512,500; Balloons, parachute sail for, T. Schneider-Preiswerk... 512,450; Bandage, F. W. Pulford... 512,324; Bar, See Car draw bar, Locomotive draw bar... 512,404; Basket, shipping, Springer & Evison... 512,404; Battery, See Secondary battery... 512,577; Battery, W. M. Stine... 512,577; Bearing, anti-friction, J. C. Lafreniere... 512,467; Bell for doors, tables, etc., I. L. Garside... 512,435; Bending machine, D. R. Cowan... 512,366; Bicycle, Clark & M. Thompson... 512,538; Bicycle seat posts, support for, L. S. Kallajian... 512,379; Bicycle speed gearing, McKenzie & Brock... 512,479; Bicycle stand, F. G. Hurlbut... 512,548; Bicycle wheel, E. Stenersen et al... 512,453; Bicycles, tricycles, or other velocipedes, means for adjusting the driving chains of safety, A. Blackwell... 512,257; Billiard ball, T. Neumann... 512,391; Boiler, See Straw burning boiler... 512,524; Boiler covering, T. Sparham... 512,536; Boiler furnace, steam, T. R. Butman... 512,334; Boiler tubes, device for cutting, C. O. Thieme... 512,631; Boot or shoe, A. M. Thompson... 512,412; Bottle, etc., H. R. Harper... 512,374; Bottle shaping implement, A. L. Straus... 512,409; Bottle stopper, C. Huch... 512,652; Bottles, machine for wiring corks in, G. C. Coon... 512,281; Bottling machine, W., Jr., & S. C. Childs... 512,432; Box, See Fruit or berry box, Letter box, Mail box... 512,517; Box fastener, A. Ottenheimer... 512,19; Box for cigars or other articles, J. Frazee... 512,569; Box or coop, convertible, G. Bernhard... 512,569; Brake, See Car brake... 512,673; Brewer's grains, apparatus for drying, A. Mason... 512,334; Brick kiln, C. A. M... 512,597; Broom holder, F. E. Allen... 512,363; Brush, F. J. Clarke... 512,452; Buttonhole cutter, C. A. Shultz... 512,452; Camera, See Panoramic roll holder camera... 512,601; Camera shutter, H. B. Carlton... 512,403; Can, See Oil can... 512,323; Can fluxing mechanism, J. Solter... 512,323; Canning machinery, E. R. Pruitt... 512,619; Car and pipe coupling, combined, G. T. McCrear... 512,376; Car brake, A. Hendee... 512,588; Car brake, H. Thompson... 512,497; Car brake beam, railway, D. L. Barnes... 512,497; Car coupling, C. Washburn... 512,507; Car coupling, C. E. C. Edey... 512,286; Car coupling, T. Forstner... 512,661; Car coupling, L. Pix... 512,386; Car coupling, J. Rawles... 512,630; Car coupling, J. C. Taylor... 512,486; Car coupling, C. Washburn... 512,389; Car coupling, automatic, P. McMullan... 512,467; Car door fastener, T. Eubank... 512,438; Car draw bar, railway, J. A. Sample... 512,575; Car loader, F. W. Bond... 512,341; Car safety stop, A. B. Trenner... 512,480; Car sand box, H. McPherson... 512,534; Car seat, railway, E. B. Cushing... 512,297; Car, tank, E. W. Mackenzie-Hughes... 512,513; Car, vestibule, J. Meeban... 512,329; Cars, metallic draught sill for, T. C. Salveter... 512,443; Carding machine feeding device, T. Kershaw... 512,530; Carpet stretcher, S. Livingston... 512,305; Carpet stretcher and tacker, D. H. McFalls... 512,659; Carriage jump seat, J. Miller, Jr... 512,618; Case, See Historical case. Packing case... 512,641; Cash register and check printer, motor driven, C. W. Weiss... 512,639; Cash register, indicator, and recorder, C. W. Weiss... 512,640; Cash register, recorder, and check printer, C. W. Weiss... 512,509; Cattle guard, J. T. Hall... 512,471; Chart stand and easel, combined, H. E. Holt... 512,471; Chest banking, C. H. Willis... 512,504; Chimney, A. Custodie... 512,504; Chimney, sectional ventilating, S. H. Richmond... 512,283; Chuck, lathe, C. F. Elliott... 512,578; Churn, M. O. Barke... 512,624; Churn, working body, G. H. Smith... 512,628; Cloth pressing machine, E. Gessner... 512,610; Clutch, J. N. Wilson... 512,643; Cock stop, A. Campbell... 512,537; Commutators of dynamos, device for blowing out sparks on, H. W. Hanahan... 512,612; Compound engine, A. J. L. Loretz... 512,306; Concrete mixing mill, E. L. Ransome... 512,623; Copying apparatus, Miller & Covell... 512,446; Cooker, steam, J. P. Tallant... 512,589; Cooking vessel, device for carrying off odors from, B. F. Fowler... 512,650; Cooler, See Lard cooler... 512,658; Copying press, J. H. Smith... 512,628; Cores, machine for making foundry, E. Grant... 512,389; Corn cutting and shocking machine, H. McPherson... 512,314; Corn husker, F. Crook... 512,367; Corn husker, green, W. F. Dana... 512,423; Cotton gins, combined beater and carder for, W. P. Kopper... 512,445; Coupling, See Car coupling. Car and pipe coupling. Pipe coupling...