

ENGINEERING INVENTIONS.

An oscillating engine has been patented by Mr. Douia C. Putnam, of Wayne Center, N. Y.

A traction engine has been patented by Mr. Benjamin S. Benson, of Baltimore, Md.

AGRICULTURAL INVENTIONS.

A grain separator has been patented by Messrs. Francis Wadsworth and Henry N. Prentice, of Venice, O.

A seed planter has been patented by Mr. Louis S. Flatau, of Pittsburg, Texas.

MISCELLANEOUS INVENTIONS.

A lemon squeezer has been patented by Mr. Sheridan S. Badger, of Chicago, Ill.

A fire escape has been patented by Annie M. Jeffers, of Chicago, Ill.

A pipe tongs has been patented by Mr. James J. Palmer, of Fall Brook, Pa.

A nail plate furnace has been patented by Mr. Simeon Bunn, of Belleville, Ill.

A reflector has been patented by Mr. James E. McLaughlin, of Portland, Oregon.

A tag making machine has been patented by Mr. Harner Denney, of Brooklyn, N. Y.

A motor has been patented by Mr. Jackson B. Miles, of Lincoln, Ga.

A tongue support has been patented by Mr. Milo M. Russell, of Hayward, Wis.

A necktie fastener has been patented by Mr. Daniel T. Freese, of North Amherst, O.

A two wheeled vehicle has been patented by Messrs. William E. Davies and William C. Gayley, of Deringer, Pa.

A belt punch has been patented by Messrs. Henry Bouchy and J. Henry Bamberger, of Newark, N. J.

A metallic bayonet scabbard has been patented by Mr. James McKenney, of New York city.

A bellows has been patented by Mr. Jacob F. Weitzel, of Cincinnati, O.

grooves or pockets, while the bag or flexible portion has its edges inserted and held in these pockets...

A broom holder has been patented by Mr. James F. Barringer, of Bennettville, S. C.

A safety device for elevators has been patented by Mr. Peter Moran, of New Orleans, La.

A nutmeg grater has been patented by Mr. Albert L. Platt, of Bowling Green, Mo.

A land channeling roller has been patented by Mr. Robert H. Banks, of Fort Lewis, Col.

A sawing machine has been patented by Mr. Daniel W. Smith, of Long Lake, Mich.

NEW BOOKS AND PUBLICATIONS.

DYNAMO-ELECTRIC MACHINERY. By Silvanus P. Thompson. New York and London: E. & F. N. Spon.

This is a second and much enlarged edition of a volume published by the same author in 1884...

THE DETERMINATION OF ROCK-FORMING MINERALS. By Eugene Hussak. New York: John Wiley & Sons.

The authorized translation of this German work has been made by Dr. Erastus G. Smith, of Beloit College, Wis.

METHODS OF RESEARCH IN MICROSCOPICAL ANATOMY AND EMBRYOLOGY. By Charles O. Whitman. Boston: S. E. Cassino & Co.

This volume is intended for everyday use in the zoological laboratory, to secure uniformity in practice according to the best methods of investigation...

Received.

- THE SCIENCE OF MIND APPLIED TO TEACHING... TECHNICAL VOCABULARY, ENGLISH AND GERMAN... THE PANAMA CANAL: ITS HISTORY, POLITICAL ASPECTS, AND FINANCIAL DIFFICULTIES...

Business and Personal.

The charge for insertion under this head is One Dollar a line for each insertion; about eight words to a line.

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The Knowles Steam Pump Works, 44 Washington St., Boston, and 93 Liberty St., New York, have just issued a new catalogue...

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Wood Working Machinery. Full line. Williamsport Machine Co., "Limited," 110 W. 3d St., Williamsport, Pa.

Iron Planer, Lathe, Drill, and other machine tools of modern design. New Haven Mfg. Co., New Haven, Conn.

Machinists' Pattern Figures, Pattern Plates, and Letters. Vanderburgh, Wells & Co., 110 Fulton St., N. Y.

(1) P. H. desires a stain to imitate cherry. A. Rain water 3 quarts, annatto 4 ounces; boil in a copper kettle till the annatto is dissolved...

(2) W. C. writes: In making a red or yellow stain with dragon's blood or turmeric, I want to tone these colors with a black, soluble in alcohol.

(3) F. F. K.—Old zinc battery plates can be melted in an iron pot and cast into plates in moulding sand, or may be cast in an iron mould.

(4) J. W. B. desires a recipe for some fire-extinguishing liquid. A. One of the best solutions for the extinction of incipient fires consists of crude calcium chloride 20 parts, salt 5 parts, dissolved in water 75 parts.



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.

(9) F. C. E. asks how to make a mould from which he can get one or two dozen castings in tin or its soft alloys.

(10) W. V. L. asks: Is it true that gold and silver are elements, and theoretically are free from all admixture.

(11) J. M. L. G. asks: 1. What is about the cost of the least complicated and plainest (and therefore the cheapest) lathes in the market?

(12) A. E. L.—Oberlin College, Ohio, Cornell University, Ithaca, N. Y., are institutions where part of the dues are taken in labor.

(13) M. I.—Lignite may be readily pressed in bricks for burning, by the addition of a little tar or fluid pitch or asphalt.

(14) G. E. B. asks: Of what value would a knowledge of the process of hardening copper be to any one at the present time?

(15) F. W. asks the simplest way to tell how much a block and fall will safely carry. Also, how many men it would take to lift a certain weight with a 2 and 3 sheave block, and the difference with 3 and 4 sheaves and blocks; also, if ropes are measured round or through, and if there is a book on ropes and knots.

(16) T. H. G. writes: I have a mahogany table which has been varnished and has ink spots on it. 1. By what means can I get the varnish and ink off, in order to rub on an oil finish?

(17) F. A. C. desires a receipt for a harness cleaner and oiler. A. Take 2 ounces mutton suet, 6 ounces beeswax, 6 ounces powdered sugar candy, 2 ounces soft soap, and 1 ounce indigo or lampblack.

(18) C. H. B.—The coarse emeries are sifted. You may buy sieves of brass for grades down to No. 80 or 90. After that, wash by placing the emery in a basin, pail, or tub, according to the quantity you wish to wash, with a small pipe attached to a hose from a water supply, and a faucet to regulate the flow; stir the emery at the bottom of the pail with the hose nozzle, allowing the water and fine emery to run over the side of the pail into a pan larger than the pail, and, if necessary, continue the overflow into two or three pans.

(19) L. S. P.—Height of Washington monument, 555 feet. The depth that a body sinks in sea water depends upon its density.

(20) C. B. writes: 1. I have an iron wash sink with a common trap and 3/4 inch waste pipe

leading to a cesspool in yard. When water is thrown in the sink, it does not run off readily; a pint would take two or three minutes, but, by lifting up the trap (strainer), the water bubbles up two or three times and then runs down all right.

(21) W. B. H. writes: Have you a recipe composed of linseed oil and resin, mixed, to make muslin semi-transparent and waterproof?

(22) S. G. W. writes: Sam Jones, the noted revivalist, is trying to make people believe that 13 worlds have been lost sight of by the astronomers, and it is a sure sign that one world or planet will soon be destroyed.

(23) J. J. W. asks: 1. The ingredients for a good water stain to imitate walnut? A. Burnt umber 2 parts, rose pink 1 part, glue 1 part, water sufficient; heat all together and dissolve completely; apply to the work first with a sponge, then go over it with a brush, and varnish over with shellac.

(24) H. N. S. asks: Which is the faster—a toboggan or a sled (steel shod); assuming that the total weight is the same in each case, the incline of the coast the same, and each on a coast best adapted to it? Also, the reasons governing your reply.

(25) N. N.—Art work is so various in its specialties that we cannot venture on specific names without knowing what you should know, viz, what your taste leans to in art study.

(26) C. R. asks whether successive coats of glue, applied hot to wood or articles of a woody nature, would permeate the material, giving it toughness and rigidity, or would said glue remain as a mere coating, not permeating?

(27) J. M. D. asks: Is there any virtue in the "divining rod," so called, as a means of determining the locality of hidden streams of water?

(28) T. E. writes: I have a marine boiler in use on a steamboat that gives plenty of steam, but the motion of the engine (12 inches in diameter, 5 feet stroke) raises the water in said boiler at least 4 inches.

so, how large a drum would be necessary? Would this additional drum save fuel? My steam pipe is 3 inches. A. The additional steam drum will not help you. It will only add to the work of the boiler by condensing the steam.

(29) L. H. R. writes: In a hydraulic ram for making lead pipe the water ram is cased with grooves running vertically with the ram. This caused the water to leak so badly, I had a new ram cast. I now notice small grooves beginning in the same manner, which, in less than a year's time, will compel me to get another new ram, unless the evil is remedied.

(30) C. R. desires a simple size for making decalcomanie or transfer paper. A. Use gelatin size. 2. Could I bake in a japan oven so that the transferred printing could be drawn slightly, like a blacking box lid?

(31) H. L. writes: 1. I wish to melt a gold coin in a sand crucible, and want instructions how to proceed. A. Break into small pieces, mix with borax, and expose it in the crucible. 2. Is there danger of heating too hot? A. No. 3. Can I remedy its tendency to crack? A. Only by proper annealing.

(32) J. G. H.—We could not recommend a steam pump to be used once a fortnight. It would never be in order for running. A small low pressure steam pump in the market will cost about \$125.

(33) J. C.—A first class ice boat, sailing on first class ice, will sail from three to four times faster than the wind that drives the boat.

(34) W. H. O. desires a formula for making white miners' oil, for burning in lamps. A. Take 50 to 60 per cent mineral, seal, or some other 300° oil and from 40 to 50 per cent of pure lard oil.

(35) E. W. asks: What is a good, cheap substitute for beeswax to coat wooden patterns for use but a few times, something that can be applied with a brush, without heat? A. Shellac varnish.

(36) J. C. writes: I am burning in my boiler slabs that are saturated with salt water, and find that the tubes of the boiler have to be cleaned out every few days on account of the salt, which is coated heavily upon them.

(37) J. S.—Cast or tool steel cannot be welded together with any certainty. Low grade steel that will harden, such as shear and double shear, can be welded together fairly with borax and sal ammoniac or borax alone, which are also good for welding steel to iron.

(38) E. M. asks (1) what to add to hair oil that will give the hair a yellow color. I have very light hair, and would like to color it a darker shade. A. A bismuth hair dye is described in SCIENTIFIC AMERICAN SUPPLEMENT, No. 356, which is not considered injurious at all to the head.

(39) P. M. A. asks: Would you please give some remedy whereby tattoo marks may be completely expunged? A. We know of no means by which they can be completely removed.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

January 12, 1886, AND EACH BEARING THAT DATE.

[See note at end of list about copies of these patents.]

Table listing inventions and their patent numbers, including: Abrading machine, C. K. Bradford; Acid, apparatus for distributing, etc.; Acid, manufacture of salicylic, R. Schmitt; Aging spirituous liquors, wines, etc.; Apparatus for, H. A. Fitch; Air brake for railway cars, electro-magnetically operated, H. Hollerith; Air compressor, L. S. Chichester; Air or gas engine, G. H. Babcock; Air and gas engines, operating, G. H. Babcock; Air or gas engines, operating, G. H. Babcock; Animal trap, W. E. Maultby; Animal trap, G. F. Voester; Automatic brake, J. T. Honeycutt; Axle box, car, W. Sutton; Bag and twine holder, combined, J. Duls; Bagasse furnace, W. W. Sutcliffe; Baling press, P. K. Dederick; Barrel filler, J. McKenzie; Bellows, J. F. Weitzel; Belts, slide for sword, F. T. Buffum; Bicycle, J. L. Yost; Bicycle seat, C. M. Clarke; Billiard chalk holder, W. Zaehring; Block, See Hat finishing block. Pulley block. Sawmill head block. Boiler, See Steam boiler. Boiler, W. C. Penneck; Book rest and stand, folding, Walker & Crayton; Boot and shoe burnishing machine, H. Nelson; Boot and shoe nail, A. Eppler, Jr.; Boot or shoe, J. J. Feeney; Boot or shoe buffing roll, C. K. Bradford; Boot or shoe creeper, L. C. Hoffmeister; Bottle stopper, R. Bloeser; Bottle stopper fastening, H. P. Brooks; Bottling machine, W. F. Dorringer; Box, See Cash box. Folding box. Bracket, See Easel shelf bracket. Brake, See Automatic brake. Brick drying structure, J. K. Caldwell; Bridge gate, automatic draw, W. S. Morton; Bridle blind, A. F. Ransom; Bridle, harness, M. R. Good; Broom corn, compound for softening and dyeing, J. A. Van Winkle; Broom holder, J. F. Barringer; Brush, J. F. Bowditch; Brush backs, device for inserting bristles in, E. Kipper; Brush making machine, J. M. Pickering; Building material form of, J. S. Armstrong; Bustle, A. M. Belden; Button, I. G. Platt; Button or stud, T. B. Cleveland; Button setting machine, Wilkins & Bartlett; Cable grip, roller, G. A. Polhemus; Calculating machine, E. W. Watson; Can counting machine, E. Norton; Can delivering device, automatic, E. Norton; Capsule machine, J. Krehbiel; Car coupling, M. Dill; Car coupling, D. M. Harris; Car coupling, L. B. Kenney; Car starter, C. F. Dodge; Cars, street indicator for, Beaver & Jewitt; Carbons, apparatus for treating, E. Weston; Carpet fastener, F. C. Hellmuth; Carpet stretcher, Keller & Wilby; Carpets, etc., fastening for, D. M. & J. E. Smyth; Carriage, baby, J. W. Griffin; Carriage, baby, J. R. Moore; Cash box, self-registering, T. Carney; Cast wheel, pulley, etc., M. D. Loomis; Casting box, stereotype, Pratt & Partridge; Casting spring, mould for, E. H. Murdock; Chair, See Spring chair. Chair, J. W. Price; Chimneys on burners, device for holding and locking, J. R. Bowers; Churn, W. Jarrell; Cider machine, M. K. Brunaker; Circuit changer, automatic, E. T. Gilliland; Clamp, See Sucker rod clamp. Clamping device, spring, I. W. Haysinger; Cleansing machine, T. H. Page; Clip, See Traveling bag clip. Clock escapement, C. Becker; Clock gong and bell, G. Gardner; Clothes pounder, Hill & Crooker; Cock box, stop, B. C. Smith; Collar fastening, horse, Gillespie & Cassan; Colors, manufacture of archil-red azo, C. A. Martius; Connecting rod, bearing pin, L. H. Nash; Connecting rod for pistons, etc., L. H. Nash; Cooling and disinfecting apparatus, L. H. Lattimer; Cork extractor, Tobias & Shoemith; Corset, K. Dunham; Counter and show case, combined, S. B. Dooley; Coupling, See Car coupling. Detachable coupling, Hub and axle coupling. Coupling joint, B. F. Sweet; Cuff holder, F. E. Kohler; Cultivator, S. L. Allen; Cultivator, M. F. McCray; Cultivator, W. C. Peters; Cutter, See Meat cutter. Desk and seat, combined adjustable, A. B. Irvin; Detachable coupling, W. E. Link; Door attachment, sliding, W. Spear; Door hanger, C. W. Bullard; Draught equalizer, J. L. Powles; Drum, heating, M. N. Kimble; Dyed, machine for conditioning warps for being, I. F. Lawry; Easel shelf bracket, T. P. Watkins; Eaves trough, W. C. Berger; Electric alarm apparatus, C. H. Hilton; Electric light, multiplex, A. C. Ferguson