

(19) W. H. G. asks how a cord of 4 foot wood should be piled up. One says that the sticks should be laid straight, with the bark side down, when they have bark only on one side; another, that it should be laid straight, rather carelessly, the pile to be 4 feet high and 3 feet wide; while a third claims that in New York and Philadelphia the practice is 128 cubic feet solid timber, arrived at by water displacement. A. 128 cubic feet as piled is one cord. The seller wishes to pile as open as possible, by so piling as to have the angles come in contact; the buyer, on the contrary, wishes to pile as close as possible, by fitting the angles into each other.

(20) W. H. B. asks: Which quality of iron, hard, coarse, and granular, or fine, soft, and close grained, will best stand the heat of anthracite coal under steam boilers, grate use? A. We think a mottled gray iron with large crystals is the best for the purpose.

(21) E. S. F. asks if a boiler 16 inches diameter, 4 feet high, with the sides and ends of wrought iron 3-16 of an inch thick, will hold 50 lb. pressure with perfect safety. A. 3-16 will do for the sides, but the ends, if made 3-16, should have a brace tying the two ends together.

(22) W. T. writes: 1. I have an upright engine of six inch bore and 12 inch stroke (6 inch by 12 inch), ports 3/4 inch by 1/2 inch, exhaust 3/4 inch by 1 inch. I am told that it is designed to run at 100 to 125 turns per minute. Now with this engine how can I run a boat about 32 feet long, of less than 5 tons measurement (500 cubic feet), with side wheels, stern wheel, or propeller, using steam at 100 to 125 lb. in boiler, no cut-off, at the rate of 10 miles per hour for a several hours' trip? A. You can do it by using a propeller, if you have ample boiler. 2. Is there any kind of side wheels that could be run advantageously at 125 turns per minute? A. No. 3. Is it practicable to run such a boat, weighing with contents 4 tons, with such an engine, with side wheels, at ten miles per hour? A. No. 4. Would friction pulleys work as well as gearing? A. You need no gearing for a propeller.

(23) W. W. writes: I have a small boiler, 5 feet in length and 13 inches diameter, with 18 one-inch tubes. I have laid it down, and the fire box, of brick, is 9 by 18 inches, and the bridge wall is 3 inches from the boiler, and is continued that way all the way to the end of the boiler, where a space of 9 inches is left. The space under the grate is 1 foot, and the smoke pipe is 8 inches. The fire goes under the boiler and returns through the tubes. I have put the exhaust into the pipe, but can get no draught. What is the trouble? A. The trouble is in the small area of the tubes; set your grate out in front of the boiler, with 2 1/2 inches depth of fire under the boiler; let the fire pass both through the tubes and under the boiler direct to the chimney.

(24) F. W. R. asks how to obtain a column of air having a velocity of twenty-five thousand feet per minute (25,000 feet); the opening or nozzle to be one inch. Could I use an air pump, forcing the air into a chest or box, and then use it at will, from one inch openings? A. The only way is to compress the air by an air pump to the pressure necessary to give the required velocity.

(25) J. D. R. asks how to make a paint or blacking for a boiler. The boiler is in the house, and something that makes as little smell and smoke as possible, is desirable. A. Use asphaltum varnish. There is little or no odor from it when dry.

(26) J. C. asks: On an engine with cylinder 5 inches diameter and 4 inch stroke, running at 200 revolutions per minute, with an average steam pressure of 50 lb. per square inch, what size pulley should be used to drive woodworking machinery, said pulley to be used both as pulley and balance wheel? A. Probably a pulley 4 1/2 inch face; the diameter must be determined by the speed required for your line shaft.

Table listing various mechanical items and their prices, including Carding machine, Carriage springs, Carriages, Cartridge capping, Cartridge turning, Catarrh remedy, Centrifugal machine, Churn, Clay or cement to make the joints of stoves, Clock and watch, Clothes line reel, Clothes wringer, Coffee and rice huller, Coffee pot, Coin holder, Collar and hame attachment, Concrete pipe, Copper lined boiler, Corn stub cutter, Corset, Cotton gin, Cotton scraper, Cradle, platform, Cupel furnace, Curtain fixture, Curtain roller and bracket, Curtain roller, spring, Dental engine, Door brace, Dredge winder, Electric recorder, Elevator, Eyeglasses, Fence, barbed wire, Fire alarm telegraph box, Firearm lock, Fire escape, Fire extinguisher, Fireplace, Fishing reel, Furnace feeder, Fuse for shells, Garter, Gas burner, Gas lighting device, Gilder's press, Glassware, Governor and speed regulator, Grater and cutter, Grave shield and body protector, Harness pad, Harvester, Hat finishing machine, Hat pouncing machine, Hat sweat, Hitching device, Horse litter, Ink well, Ironing machine, Kitchen boiler, Kneader, Lamp, Barnard & Hanna, Lamp, E. S. Drake, Lamp, J. P. Smithers, Lamp, C. F. Spencer, Lamp burner, G. K. Osborn, Lamp, electric, D. Pendleton, Lard cooler, Lead pigments, Letter and character, Letters, making partly transparent, Lifting jack, Malt extract, Mangle, Match, friction, Measure, scale, Metal trap, Mining drill, Mirror, folding, Miter box, Mower, F. Bramer, Mower, W. F. Rundell, Mower, lawn edge, Ore separator or concentrator, Organs, pneumatic action, Oven, baker's, Ox shoe blank bar, Packing, piston, Pantaloon, and other garments, Paper bag machine, Paper cutting machine, Paper folding machine, Paper stock, reducing wood to, Cornell & Tollner, Pavement, wood, W. H. Stow, Paving block, Anderson & Greenawalt, Pea sheller, Pen, perforating, Baird & Macy, Pepsin, preparation of, W. H. Ball, Photographing embossing press, N. Weston, Pitman connection, S. Shiffett, Plaiting machine, C. T. Laur, Plated ware ornamenting tool, H. W. Hirschfeld, Plow, riding, A. Belchambers, Plow, sulky, P. L. Case, Pocket knife, C. L. Butler, Printing machine, chromatic, G. W. Woodside, Pump, J. & R. Bean, Pump, D. C. Montgomery, Pump, hydraulic air, G. K. Osborn, Pumps, safety device for steam, N. W. Dunlap, Rocking chair, J. Loch, Rolling iron, Eynon & Lloyd, Rolling pin, P. Cromer, Root cutting machine, J. W. Weymouth, Sash fastener, J. L. Wayne, Jr., Sash stop and lock, Crosby & Thompson, Saw clamp, M. J. Barrow, Saw, scroll, C. A. Dearborn, Scraper, walking, G. J. Weber, Seed drill, R. B. Sheldon, Seed package, C. O. Wolferts, Sewing machine, hand power attachment for, A. B. Felt, Sewing machine, needle guard, A. Wemple, Sewing machine shuttle, W. T. Elliott, Sheet metal coating apparatus, E. Morewood, Shirt, G. Churchill, Shovel, C. W. Hubbard

Table listing various mechanical items and their prices, including Signal box, non-interfering, Skivink machine, Slate, hinged, Smoke and cinder conveyer, Snow plow, Spark arrester, Speculum and electric light, Spice package and pastry utensil, Spinning rope yarn, Steam generator, Steam or water engine, Steamer, feed, Stove door, illuminated, Stove, gas, Stove, oil, Strap protector and buckle, Stud for boots and shoes, Stump extractor, Telegraph and fire alarm signal apparatus, Telephone, underground, Telephone, A. C. Hubbard, Telephone case, Telephone circuit, Telephone, electric speaking, Telephone exchange system and device, Telephone signal, Telephone switch, Ticket or tag, pin, Tile, drain, Time keepers, escapement, Time pieces, escapement for, Tin and terne plate, making, Tobacco, machine for dressing and finishing fine cut, Trace carrier, Treadle, E. T. Thomas, Trees, roots, etc., compound for destroying, Turbine wheel, Tuxey, T. McCaffery, Vegetable slicer and grater, Washing machine, J. Carroll, Washing machine, M. L. Hawks, Washing machine, A. Walton, Washing machine, D. Warnock, Watches, removable pocket for, Water elevator, Water wheel, Watering stock, device for, Weather strip, Whiffletree hook, Windmill, Z. F. M. Cottle, Woodwork, mosaic, Wool washing machine, Zinc furnace, Hegeler & Matthiessen

Table listing various mechanical items and their prices, including Trade Marks, Batefor tanners' use, Canned salmon and other fish, Cigars, Steinberg Bros. & Co., Cigars, E. A. Smith, Cigars and cigarettes, Fitzpatrick & Draper, Cigars, cigarettes, and smoking tobacco, L. Simons & Brother, Cigars, cigarettes, and chewing and smoking tobacco, Ed. Aschermann & Co., Cigars, cigarettes, and smoking and chewing tobacco, H. Muller, Cigars, cigarettes, and smoking and chewing tobacco, H. R. Kelly, Flour, Wilkinson, Gaddis & Co., India-rubber boots shoes, and foot coverings, The L. Candee & Co., Medical compound, W. McCurdy, Oil or dressing for harness, shoes, etc., J. T. Vail & Brother, Plug and fine cut chewing tobacco, Pace, Talbot & Co., Smoking and fine cut chewing tobacco, cigars, cigarettes, and snuff, Marburg Brothers, Whisky, H. W. Smith & Co.

Table listing various mechanical items and their prices, including Designs, Font of printing types, Bailey & Gilbert, Knit drawers, Swits Conde, Lamp brackets, F. E. Seidensticker, Medal batteries, W. M. Elias, Monuments, J. & J. Pool, Parlor or heating stove, I. T. Montross, Scarf pin, W. A. Beatty, FOR THE WEEK ENDING OCTOBER 14, 1879. TRADE MARKS, Beverage termed "homeopathic coffee," The Kaoka Manufacturing Company, Cigars, cigarettes, plug and other chewing tobacco, and smoking tobacco, W. Duke, Sons & Co., Gloves and suspenders, Fisk, Clark & Flagg, Illuminating oils refined from petroleum, Sone & Fleming Manufacturing Company, Lager beer, V. Loewer, Linen thread, Marshall & Co., Scarfs or light fabrics for gentleman's wear, Fisk, Clark & Flagg, Smoking tobacco, J. W. Carroll, Smoking and chewing tobacco and cigarettes, L. Ginter

Table listing various mechanical items and their prices, including Designs, Clock cases, Henry J. Davies, Sad iron stands, U. D. Eddy, Speaking tubes, W. R. Ostrander, Scarf pin or similar articles of jewelry, J. L. Remlinger, English Patents Issued to Americans, From October 10 to October 14, inclusive, Bedstead and toilet stand, H. A. J. & E. C. A. Rieckert, New York City, Churns, E. Rhodes, Illinois, Grain binder, W. A. Wood, M. and R. M. Co., Hoosick Falls, N. Y., Handkerchief, etc., Mrs. E. W. M. Cameron et al, Brooklyn, N. Y., Indicator for steam engines, G. H. Crosby, Mass., Mining machine, F. M. Lechner, Waynesburg, Ohio, Nail machinery, D. Armstrong, Chicago, Ill., Pressure regulator, M. G. Wilder, Brooklyn, N. Y., Steam generator, C. Ward, Charleston, W. Va., Thilling apparatus, C. E. Sackett, Matilda Furnace, Pa.

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INDEX OF INVENTIONS

FOR WHICH

Letters Patent of the United States were Granted in the Week Ending October 21, 1879, AND EACH BEARING THAT DATE. [Those marked (r) are reissued patents.]

Table listing various mechanical items and their prices, including Aerator and refrigerator for beer and other liquids, Agate and other stones, bleaching, coloring, and ornamenting, Aluminous cake, making, Anvil and vise, Axle box, car, Bale tie, Baling press, Beehive, Beer, apparatus for filling out, Beer, extracting malt in making, Blasting squib, Boat lowering apparatus, Boot and shoe button hole, Boot and shoe former, Boot and shoe sole edge finisher, Boot, rubber, Bootie, Bracket, Bung and bushing, Bung and stopper for casks, Button, dress, Can cover, Candlestick, Car coupling, Car coupling, Cook & Leas, Car coupling, F. C. Doolittle, Car coupling, S. Garratt, Car coupling, Harlin & Byram, Car coupling, J. H. Horton, Car coupling, P. Y. Kepler, Car warmer, street, Car window, Carbureter, Carding machine, Carriage springs, Carriages, reversible handle for childrens', Cartridge capping and uncapping implement, Cartridge turning implement, Catarrh remedy, Centrifugal machine, Churn, Clay or cement to make the joints of stoves and freplaces, Clock and watch, Clothes line reel, Clothes wringer, Coffee and rice huller, Coffee pot, Coin holder, Collar and hame attachment, Concrete pipe, apparatus for making and laying continuous, Copper lined boiler, Corn stub cutter and splitter, Corset, abdominal, Cotton gin, Cotton scraper, Cradle, platform, Cupel furnace, Curtain fixture, Curtain roller and bracket, Curtain roller, spring, Dental engine, Door brace, Dredge winder, Electric recorder, Elevator, Eyeglasses, nose clamp for, Fence, barbed wire, Fence, rail, B. A. Welds, Fence, wire, L. W. Bosart, Fire alarm telegraph box, non-interfering, Firearm lock, Firearm, magazine, Sweeney & Wetmore, Fire escape, Fire extinguisher, automatic, Fireplace, open, Fishing reel, Furnace feeder, Fuse for shells, time and distance, Garter, W. W. Anderson, Gas burner, O. Tirrill, Gas lighting device, electric, Gilder's press, J. T. Shepperd, Glassware, manufacture of, Governor and speed regulator, engine, Grater and cutter, vegetable, Grave shield and body protector, Harness pad, adjustable, Harvester, pitman, Hat finishing machine, Hat pouncing machine, Hat sweat, Baker & Van Gelder, Hitching device, safety, Horse litter, C. V. Petveys, Ink well, J. D. Williams, Ironing machine, J. Reidy, Kitchen boiler, L. S. White, Kneader, dough, Lamp, Barnard & Hanna, Lamp, E. S. Drake, Lamp, J. P. Smithers, Lamp, C. F. Spencer, Lamp burner, G. K. Osborn, Lamp, electric, D. Pendleton, Lard cooler, Lead pigments, making, Letter and character, mica, Letters, making partly transparent, Lifting jack, Malt extract, producing, Mangle, C. Reese, Match, friction, W. T. Mersereau, Measure, scale, J. M. Gaskins, Metal trap, soft, Mining drill, F. B. Parrish, Mirror, folding, N. F. McEvoy, Miter box, Rogers & Goodell, Mower, F. Bramer, Mower, W. F. Rundell, Mower, lawn edge, T. Hanley, Ore separator or concentrator, Organs, pneumatic action for, Oven, baker's, Ox shoe blank bar, J. Deeble, Packing, piston, C. W. Baldwin, Pantaloon, and other garments, E. Spies, Paper bag machine, W. C. Cross, Paper cutting machine, lever, Paper folding machine, V. Scott, Paper stock, reducing wood to, Cornell & Tollner, Pavement, wood, Paving block, Anderson & Greenawalt, Pea sheller, Pen, perforating, Baird & Macy, Pepsin, preparation of, Photographing embossing press, Pitman connection, S. Shiffett, Plaiting machine, C. T. Laur, Plated ware ornamenting tool, Plow, riding, Plow, sulky, P. L. Case, Pocket knife, C. L. Butler, Printing machine, chromatic, Pump, J. & R. Bean, Pump, D. C. Montgomery, Pump, hydraulic air, Pumps, safety device for steam, Rocking chair, Rolling iron, Rolling pin, Root cutting machine, Sash fastener, Sash stop and lock, Saw clamp, Saw, scroll, Scraper, walking, Seed drill, Seed package, Sewing machine, hand power attachment for, Sewing machine, needle guard, Sewing machine shuttle, Sheet metal coating apparatus, Shirt, Shovel, Printing types, Knit drawers, Lamp brackets, Medal batteries, Monuments, Parlor or heating stove, Scarf pin, Beverage termed "homeopathic coffee," Cigars, cigarettes, plug and other chewing tobacco, and smoking tobacco, Gloves and suspenders, Illuminating oils refined from petroleum, Lager beer, Linen thread, Scarfs or light fabrics for gentleman's wear, Sad iron stands, Speaking tubes, Scarf pin or similar articles of jewelry, Clock cases, Sad iron stands, Speaking tubes, Scarf pin or similar articles of jewelry, English Patents Issued to Americans, Bedstead and toilet stand, Churns, Grain binder, Handkerchief, Indicator for steam engines, Mining machine, Nail machinery, Pressure regulator, Steam generator, Thilling apparatus