



by resolution in fresh oil and reprecipitated and separated by cold and pressure. 3. How can pure paraffine be made to melt at a higher degree of heat without otherwise destroying its properties? A. Its melting point cannot be elevated without altering its properties in some degree.

(26) F. W., Jr., writes: I see in some newspapers notices of "ozone" for preserving fruits, meats, etc. Can you give your opinion as to its value, method of preparing, applying, expense, and any other information you may be willing to suggest in regard to preserving fruits? A. We have no knowledge of any practical process for preserving fruit, etc., wherein ozonoids employed. The liquid preserving agents called ozone preservatives, etc., are commonly solutions in water of the sulphites of lime and soda potassa or ammonia. Aside from the cost of producing ozone this substance, though a disinfectant, is not a preservative agent in any sense.

(27) F. G. asks: What can be used to prevent store show windows from sweating when the gas is being lit in the evening? I have taken the gas out and put in a ventilator, still they sweat and are of no use in the evening when we want to make the most show. A. Apply to the glass evenly a slight film of pure glycerine, and you will not be troubled by the "sweating" complained of. Glycerine used in this way will also prevent the formation of frost on the glass in cold weather.

(28) J. W. C. asks: What liquid or liquids will penetrate rubber? A. Try pure bisulphide of carbon or benzole. In these rubber (if pure) first swells and then dissolves. If 15 per cent of absolute alcohol is mixed with these liquids the rubber does not go into solution. Vulcanized rubber swells up without dissolving in these liquids.

(29) A. L. Y. asks: Please give a good receipt for a cologne. A. Alcohol 95 per cent, 1 quart; oil of cedar, 9 drachms; oil of thyme, 2 drachms; oils of bergamot and lemon, 6 drachms; oil of Portugal, 4 drachms; oils of neroli, vervain, and rosemary, 2 drachms; oil of mint, 2 1/2 drachms; can de melisse, 2 drachms; tincture of musk, 24 drops. Mix, and after standing twenty-four hours filter till clear.

(30) J. N. asks: Will you please let me know in your Notes and Queries column how to make a dip for brass wire, to be used in bird cages? One that will prevent the wire from corroding or getting dirty. A. See lac, dragon's blood, annatto, and gamboge, of each, 4 oz.; saffron, 1 oz.; wine spirit, ten pints. Triturate together and digest for several days, with occasional stirring. Then strain for use.

(31) Q. L. asks: Can caoutchouc which has been dissolved in carbon-bisulphide and then mixed with the right proportion of sulphur, be vulcanized to make ebonite? A. As we understand you, yes—the process is covered by several patents. 2. In vulcanizing rubber, is it necessary that steam heat be used, or will dry heat do as well? A. Dry heat will do, but steam can be used to better advantage.

(32) E. A. E. asks: How is water gas made; is it used for lighting, or only for heating; will it condense by conveying it in pipes under ground 1,000 feet; who are manufacturers of it? A. Water gas, so called, is made by passing dry steam through a column of highly heated coal contained in an air-tight furnace. A gas rich in hydrogen and carbonic oxide, mixed with carbonic acid, results. The latter impurity, together with others derived from the coal, are purified by washing in water and passing over quick-lime. For illuminating purposes it requires to be mixed with another gas—derived from petroleum—very rich in hydro-carbons. When properly prepared, very little of it condenses under ordinary conditions of temperature and pressure. See our advertising columns for addresses of those interested in this process.

(33) F. D. H. writes: A pulley 8 inches diameter is driven by belt from a pulley 36 inches diameter, making 230 revolutions. Against this belt presses a pulley 6 inches diameter. How many revolutions does the 6 inch pulley make, and what is the rule for finding the same? A. The speed of the belt is the same as that of the periphery of the driving wheel, and the relative speeds of the driving and driven wheel is as their diameters. E. g. 6 : 36 :: 230 : 1380. The speed of the 6 inch pulley is 1380 revolutions per minute.

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

M. C.—It is powdered slate or argillaceous rock containing iron sulphide—and possible traces of precious metals—an assay would be necessary to ascertain what value (if any, it has as an ore.

NEW BOOKS AND PUBLICATIONS.

THE ST. NICHOLAS MAGAZINE. NEW YORK: Published by the Century Co.

It is impossible to speak in too high terms of eulogy of St. Nicholas. It is confessedly unapproached and unapproachable in its peculiar field. It is a marvel of perfection, both as regards its literary excellence, its artistic merit, and its singular adaptability to the requirements of an eager and alert generation of young readers.

The volumes for 1880-81, now before us, maintain the high standard set for the guidance of those who have devoted their best talents to the production of St. Nicholas. The index contains the names of some of the foremost writers of the land, such as Rossiter Johnson, who has struck an entirely new vein in story writing for boys. William O. Stoddard, Felix L. Oswald, Frank Stockton's irresistibly funny fairy tales, Mrs. Dodge's "Jingles," and the clever sketches contributed by Emily Huntington Miller, Lucretia P. Hale, Susan Coolidge, and others, are enough to make the reputation of any magazine for young people. It may be truly said that the boys and girls of the English-speaking race have now presented to them, in the annual volumes of St. Nicholas, the best work by the best writers for young people.

[OFFICIAL.]

INDEX OF INVENTIONS

FOR WHICH

Letters Patent of the United States were

Granted in the Week Ending

November 29, 1881.

AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

A printed copy of the specification and drawing of any patent in the annexed list, also of any patent issued since 1866, will be furnished from this office for 25 cents. In ordering please state the number and date of the patent desired and remit to Munn & Co., 37 Park Row, New York city. We also furnish copies of patents granted prior to 1866; but at increased cost, as the specifications not being printed, must be copied by hand.

Table listing inventions with names and page numbers. Includes: Air blast, S. W. Hudson; Album clasp, E. S. Glover; Alloys, manufacturing, U. H. Hillman; Ax handle attachment, W. S. Bugg; Axle box cover, D. A. Bolt; Axle, vehicle, H. Dugan; Bag holder, V. Wheat; Bales of fibrous material, reducing, P. K. Decker; Ball, See Target ball; Battery, See Galvanic battery; Bed lounge lock, Ott & Madden; Bit stock, Q. S. Backus; Bit stock, L. J. Baker; Blotting case, F. R. Grumel; Blowing machine, J. F. Bender; Board, See Electrical switch board; Boiler, See Hot water and steam boiler; Bolt threading dies, cutting, H. E. Coy; Book, scrap, I. J. Beck; Boot and shoe attachment, W. W. Stewart; Boots and shoes, removable lining for, E. Waite; Boring holes in chair legs, machine for, F. F. Parker; Bottle stopper, S. S. Newton; Bottles and jars, handle attachment for glass, J. C. Morris; Bottles, etc., packing for, O. Long; Box; See Cuff box, Egg box; Brake, See Car brake; Button, detachable, J. C. Blake; Button or stud, sleeve or collar, N. Nelson; Button, separable, H. Lawrence; Camera, W. M. De Voe; Can, See Refrigerator can; Can filling machine, B. Sewall; Candle sheath, H. R. Harper; Cane mill, Field & Magee; Car brake, Kearney & Davis; Car, cattle, N. P. Wilkerson; Car pusher, J. Pennycook; Car, sleeping, J. M. Forbes; Car, stock, W. S. Hunter; Carriages, reversible handle for children's, J. Zimmermann; Cart, breaking, J. V. Uppington; Cart, manure dumping, E. Price; Case, See Annunciator case; Blotting case; Casting, M. B. Schenck; Castings, core for forming screw threads on, G. Cowing; Chest, See Cracker chest; Cigarette, electric, Mott & Stern; Clasp, See Album clasp; Clevis for elevators, suspension, C. M. Mallory; Clothes drier, A. H. Stephens; Clutch for pulleys and hoisting engines, friction, H. E. Armitage; Coffee, aging and improving the quality of, C. S. Phillips; Coffee, aging and maturing, C. S. Phillips; Coffins into graves, device for lowering, W. Keisling; Cold, apparatus for producing, G. F. Meyer; Colors for ornamenting fabrics, preparing, W. H. R. Toye; Colors, manufacture of rosaniline, J. Holliday; Colter, rolling, D. W. Hughes; Comb, A. Taylor; Congelation of water, etc., facilitating the, O. Guthrie; Coop or crate, O. Collins; Cork fastener, bottle, J. Walker; Cornstalk cutter, A. Cherry; Cotton picker, W. Lee; Coupling, See Hose coupling; Cracker chest, D. W. Mills; Crane, traveling, J. Walker; Crib, folding, Wilbur & Hungerford; Crimping iron cabinet, M. A. Kaler; Crucible furnace, G. Nimmo; Crushing and mixing granular and pulverulent material, machine for, P. H. Bracher; Cuffbox, I. P. Turner; Cuff holder, E. A. Robbins; Cuff or collar fastening, M. Loomis; Cultivator, wheel, F. O. Williams; Curtain fixture, W. A. Bowyer; Curtain roller, spring, B. I. Hicks; Cutter, See Cornstalk cutter; Meat cutter; Plow cutter; Stalk cutter; Dental plate, J. G. Yemen; Disintegrating mill, L. J. Bennett; Divided ring or link, H. T. Booraem; Door hanger, S. Lee; Drier, See Clothes drier; Fruit drier; Drying rack, adjustable, J. R. Moore; Ear piercing instrument, F. X. Xavery; Egg box, J. L. Stevens; Egg tester, W. S. Sanderson; Electrical switch board, T. W. Lane; Electro-magnetic device, E. Thomson; Elevator buckets, double seamer for, F. H. C. Mey; Elevator buckets, forming the bodies of, F. H. C. Mey; Embroidering and sewing machine, E. Cornely; Enamelled ware, etc., E. C. Quinby;

Table listing inventions with names and page numbers. Includes: End gate, wagon, H. H. Perkins; Engine, See Traction engine; Fabric, See Textile fabric; Fabrics, ornamenting, W. H. R. Toye; Faucet, F. C. Jellis; Fence, barbed, T. H. Dodge; Fence wire, barbed, P. P. Hill; Fence wire stretcher, J. F. Landers; File cutting machine, J. H. Sebaal; Firearm, breech-loading, F. Beesley; Fishing reel, J. Palmer; Fishing rod, T. H. Chubb; Forging rear forks of bicycles, die for, H. T. Russell; Fruit drier, A. W. Walker; Fruit press, D. H. Whittemore; Fuel, artificial, Walker & Brott; Furnace, See Crucible furnace; Glasshouse furnace; Furnace for burning solid fuel, C. Gearing; Furniture polisher, J. Swenson; Furs and articles thereof, making skinless, Koch, Jr. & Burgmiller; Galvanic battery, L. D. McIntosh; Gas lighter, electric, W. R. Nutting; Gate, See End gate; Glasshouse furnace, J. J. Gill; Glove for husking corn, W. E. Hall; Glucose, manufacture of, Weber & Scovell; Gold saving apparatus, N. H. Falk; Grain binder, J. F. Gordon; Grain meter, R. Forward; Grinding mill, J. Higginbottom; Handle, See Saw handle; Umbrella, parasol, or cane handle; Hanger, See Door hanger; Shaft hanger; Harrow, T. Haxton; Harrow, spring tooth, G. L. Gilkey; Harvester, J. P. Manny; Hats, machine for beating napped, G. Yule; Hay gatherer or loader, E. Bamberger; Headlight, locomotive, J. M. Kelly; Heating water over lamps or gas, device for, C. S. Tallmaage; Holder, See Bag holder; Cuff holder; Rein holder; Spool holder; Hook, See Snap hook; Horse detacher, R. W. Clendening; Horseshoe weight attachment, J. Harney; Hose coupling, L. Ford; Hot water and steam boiler, Livingstone & Wright; Illuminating apparatus, C. M. Lungren; Indicator, See Station indicator; Inkstand, C. De Roberts; Jack, See Lifting jack; Knife, fork, and spoon, combined, F. Praunegger; Knitting machine cam lock, A. B. Dodge; Lamp, G. Bohner; Lamp, electric, L. K. Bohm; Lamp, electric, E. M. Fox; Lamp, electric, J. H. Irwin; Latch, gate, F. N. Martin; Level, spirit, G. Egart; Level, spirit, F. Kraengel; Lifter, See Stove, etc., lifter; Lifting and weighing device, A. Arnot; Lifting jack, J. C. Beard; Light, See Headlight; Lock, See Bed lounge lock; Knitting machine cam lock; Lumber trimming machine, W. B. Swartwout; Maize, treating, L. Chiozza; Meat cutter, G. P. Terulieb; Mechanical movement, J. M. Griest; Mechanical movement, Porter & White; Medical compound, W. H. Eaves; Meter, See Grain meter; Milk and cream, apparatus for preserving, F. M. Slutz; Mill, See Cane mill; Disintegrating mill; Grinding mill; Mirror, E. G. Gollner; Mirrors, device for suspending, A. Iske; Moulding machine, gear, J. Walker; Mortar for laying bricks, etc., Arrouquier & Barret; Mortising machine, chair leg and arm, F. F. Parker; Motor, See Pump motor; Sewing machine motor; Motor, I. L. Lanais; Nippers, police, J. B. Craig; Nut and bolt lock, W. C. Kownover; Nut making machine, W. E. Ward; Ore concentrator, S. Kendall; Ore concentrator, centrifugal, A. D. Clarke; Ore separator and pulverizer, A. McKellar; Oven illuminator, A. Gampe; Pail, chamber, F. Heyl; Pantaloon and overalls, L. S. Martree; Parasol lining and the method of applying the same, L. L. Gans; Parser, corer, and slicer, apple, B. D. Labor; Picker, See Cotton picker; Plow, J. Lane; Plow cutter, M. W. Farber; Plow, listing, J. Lane; Plow, planting, J. Lane; Plow sulky [planting, Black & Pates]; Pocket for reversible garments, M. Goldberg; Power machine, manual, F. Rourk; Preservation, hermetically sealed receptacle for food, W. W. Stewart; Press, See Fruit press; Printer's lead and slug rack, C. De Vos; Printing films, adjustable frame for, B. Day; Printing machine, J. E. Hinds; Printing machine registering device, T. M. Vielle-mard; Printing plate, C. H. Hansen; Printing plates, preparing matrices for producing, C. H. Hansen; Pulverizer, dirt, J. H. Burd; Pump, W. F. Johnson; Pump, M. Walker; Pump, double-acting, H. Santrock; Pump motor, O. M. Tomlinson; Pump regulator, steam, H. Kessler; Rack, See Drying rack; Railway, elevated, S. Dowson; Railway trains, signaling, etc., apparatus for electrically stopping, W. C. Shaffer; Reel, See Fishing reel; Refrigerating preserving package, O. P. Johnson; Refrigerator, A. W. Zimmerman; Refrigerator can or barrel, C. A. Sherman; Regulator, See Turbine regulator; Rein holder, elastic check, L. M. Devore; Ring, See Divided ring; Rod, See Fishing rod; Roller, See Curtain roller; Rosaniline, sulphate compound of, H. Caro; Safe, fireproof, T. Brett;

Table listing inventions with names and page numbers. Includes: Saw blades by sand blast, apparatus for polishing, E. C. Atkins; Saw guide, band, H. A. Kimball; Saw handle, A. J. Doane; Saw tempering apparatus, E. C. Atkins; Sawing machine, D. Berry; Sawing machine, drag, G. B. Durkee; Seams of sheet metal cans, machine for making the, F. M. Leavitt; Separator, See Ore separator; Sewing machine, T. Carey; Sewing machine, corer, E. D. Fellows; Sewing machine embroidery attachment, R. M. Rose; Sewing machine motor, R. Whitehill, Jr.; Shaft hanger and box, A. Loehner; Sheet metal, machine for squaring, E. Jordan; Sheet metal pipes, machine for threading, W. W. Crane; Sheet metal, press for working, E. Jordan; Skate, H. Dobson; Skate, roller, H. M. Yates; Sleigh, T. F. Westervelt; Snap hook, W. S. Truitt; Snow, heating apparatus for melting, C. Delafield; Snow plow, W. W. Osborne; Soldering machine, can, H. R. Robbins; Soldering side seams of cans, machine for, E. Norton; Sower and fertilizer distributor, seed, H. P. Tenant; Spark arrester, C. H. Waters; Spike, J. B. Barnes; Spinning and reeling silk, machine for, J. E. Tynan; Spool holder, I. Dimock; Spring, See Vehicle spring; Watch case spring; Stalk cutter, W. S. Boyler; Stand, See Telephone stand; Starch, machine for reducing, R. W. Graves; Station indicator, Hackney & Hudson; Steam boiler, S. L. Hill; Steam can lensing apparatus, J. Charlesworth; Steam engine reversing gear, A. J. Hoag; Steering apparatus, steam, C. I. Reynolds; Stereotype locking device, E. P. Brown; Stocking, elastic, D. M. Master; Stockings, manufacture of, L. S. Cox; Stopper, See Bottle stopper; Storage tank for petroleum, F. H. Benton; Stove base, J. K. McLaughlin; Stove cover, M. G. Carleton; Stove, heating, J. R. Graves; Stove, hot blast, F. W. Gordon; Stove, etc., lifter, T. S. Lindsay; Stove, oil, A. Krause; Stove or range, cooking, L. L. Culver; Stove polish, F. A. Page; Sugar and sirup, manufacturing, Weber & Scovell; Sugar, process of and apparatus for mixing glucose with cane, S. M. Lillie; Swimming apparatus, W. K. Kieffer; Switch and signal apparatus, C. H. Jackson; Tablet, blotter, R. B. Holmes; Tanning hides, W. Harris; Target ball, J. Powell; Telegraph, automatic, R. K. Boyle; Telegraph, chemical, G. A. Hines; Telegraph instrument, W. A. Shaw; Telegraphic relay, O. Lugo; Telegraphic transmitter, S. V. Essick; Telephone receiver, H. E. Waite; Telephone, speaking, F. Blake; Telephone stand, J. A. Seely; Telephone transmitter, H. Hunning; Telephone transmitter, H. E. Waite; Telephonic relay and repeater, C. A. Randall; Textile fabric from bamboo, cane, etc., Robbins & Southmayd; Thrasher and separator, combined, H. Harbottle; Thrashing and separating machine, grain, Huber & Strobel; Thrashing machine, J. I. Case; Tie for supporting header joists, B. F. Ellis; Tire upsetter, F. K. Collier; Torpedo boats, gas expansion chamber for, G. E. Haight; Torpedo flow controller for oil wells, V. Gretter; Torpedo, apparatus for placing railway, W. M. & W. A. White; Toy, automatic, J. Doyle; Traction engine, R. B. Chritton; Truss, J. B. Mayer; Truss, hexonal, W. Nelson; Tumbler, forge, A. W. Morgan; Umbrella, parasol, or cane handle, G. W. Hughes; Valve gear, steam engine, L. Ransom; Valve, slide, W. B. Turman; Vehicle spring, G. B. Hamlin; Vehicle, two-wheeled, S. W. Metcalf; Velocipede, W. A. Whiting; Verges and pendulum rods, device for making, A. E. Hotchkiss; Washing machine pounder, J. D. Carr; Watch case spring and holder, R. F. Burke; Watch, stem winding, J. W. Hurd; Watches, method of and apparatus for demagnetizing, H. S. Maxim; Wave power, machine for utilizing, I. L. Roberts; Whip, Mullen & Noble, Jr.; Whistle, call, C. S. Leet; Wire finishing apparatus, H. Roberts; Wood ornaments, composition for artificial, O. O. Karsch; Wood working machine, R. H. Andrews;

DESIGNS.

Table listing designs with names and page numbers. Includes: Carpet, T. J. Stearns; Oil cloth, C. T. & V. E. Meyer; Saucepan handle, L. & W. H. Berger; Window cleaner handle, E. P. Hall;

TRADE MARKS.

Table listing trade marks with names and page numbers. Includes: Cigars, H. Feltnan; Cotton piece goods, Naumkeag Steam Cotton Company; Cracker or biscuit, soda, E. J. Larrabee & Co.; Dentifrice, E. Steinhauser; Fish and salt mackerel, cod, J. Pew & Son; Gin, Adams, Taylor & Co.; House furnishing japanned toilet ware, Hollander & Bradshaw; Lead white, Vogeler, Son & Co.; Liniment, H. D. Kendall; Medicine, cough, C. A. Lewis; Oranges, Wessels & Co.; Perfumes, H. S. Evans; Pharmaceutical preparations, certain, J. Wyeth & Brother; Saws, crosscut, E. C. Atkins; Vermifuge, W. G. White;