

Business and Personal.

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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 This is for our information and not for publication.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. Inquiries not answered in reasonable time should be repeated: correspondents will bear in mind that some answers require not a little research, and though we endeavor to reply to all either by letter or in this department, each must take his turn. Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same. Special Written Information on matters of personal rather than general interest cannot be expected without remuneration. Scientific American Supplements referred to may be had at the office. Price 10 cents each. Books referred to promptly supplied on receipt of price. Minerals sent for examination should be distinctly marked or labeled.

(7512) J. H., Jr., asks how to produce hydrogen and oxygen from water by an electric current, also which is the cheapest way to produce hydrogen and oxygen. A. The decomposition of water by the electric current is fully explained in Sloane's "Electrical Toy Making," price \$1 by mail. There is a cut of the apparatus; so you can easily repeat the experiment. The cheapest mode of producing hydrogen is by the action of hydrochloric or sulphuric acid on zinc. The cheapest way to make oxygen is by heating manganese dioxide and potassium chlorate in a retort. These processes are fully described in Remsen's "Chemistry."

(7513) W. J. L. asks: 1. What fluid expands and contracts most by heat and cold? Have been of the opinion that mercury does, as it is used mostly for thermometers. A. There are few, if any, substances, liquid at ordinary temperatures, which expand and contract so little by heat as does mercury. We do not know what liquid expands most; but other stands very near the head of the list in that respect, expanding more than eight times as much as mercury. Mercury is used in thermometers because of its high boiling point (610° Fab.) and low freezing point (39° Fab. below zero). 2. Also kindly inform me if it will expand and contract equally as well if inclosed in brass, iron, or other metals instead of glass. A. Mercury expands just the same in one dish as in another. Its expansion could not be seen except in a transparent dish. Mercury cannot be kept in brass, copper, lead, zinc, tin and others, since it combines with and dissolves them. It can be kept in an iron vessel.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

OCTOBER 18, 1898,

AND EACH BEARING THAT DATE.

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

Table listing inventions with patent numbers, including Agricultural boiler, Air brake, Axle, Assurance apparatus, Audiphone, Axle cutter, Axle for cycles, Axle wagon, Baking pan, Band cutter, Barrel cleaner, Barrel, Bearing ball, Bearing mechanism, Bearing roller, Bearing, Bearing, Bearing, Bed, Beer kegs, Bell, Bell, Bicycle, Bicycle brake, Bicycle cyclometer, Bicycle drive, Bicycle driving mechanism, Bicycle governor, Bicycle lamp, Bicycle pedal, Bicycle propelling mechanism.



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... Good Stories for 1899 ...

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Illustrated Announcement and Sample Copies sent on request.

THE YOUTH'S COMPANION, 201 Columbus Ave., Boston, Mass.

Table listing various mechanical and industrial inventions with patent numbers, including Bicycle saddle, Billiard cushion, Blast furnace, Boat detaching device, Bolt fastening, Bonnet or hat, Bookjack, Boring and turning mill, Bottle, Bottle stopper, Bolt fastener, Brick cleaning machine, Bridges, Bridle bit, Bristle dragging machine, Brominating apparatus, Broom handle coupling, Broom head, Brush cutting machine, Button, Buttonhole opener, Cable stopper, Cake cutting machine, Can opener, Candy, Car coupling, Car door, Car dumping, Car electric self loading street cleaning, Car fender, Car step, Car ventilator, Car Fleming, Car wheel, Cars, Car wheel, Card punch machine, Cards, Carding machine, Cash register, Catalytic material, Cell door locking, Chain cover, Chair, Chair, Chairs, Checkrein holder, Chimney top and ventilator, Chimney top draught regulator, Churn, Cistern cleaner, Claw bar, Cleaning device, Clothes hanger, Clothes hat, Clothes rack, Clothes rack, Clothes rack, Clutch, Clutch sprocket, Coat hanger, Coffee pot, Coin freed machine, Convertible chair, Copying press, Copying press, Coupling, Crane, Crane, Crank and shaft, Crate, Crutch tip, Cultivator, Curtain fixture, Cuspidor, Cutter, Cutter, Cutting machine, Dental chair, Dental engine, Dental fountain, Desk, Desulphurizing apparatus, Digger, Discharge, Display device, Door fastener, Doors.

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Table listing various mechanical and industrial inventions with patent numbers, including Dredge for mining, Dredging apparatus, Ecraseur, Egg case, Egg holder, Electric cable switch, Electric meter, Electric meter case, Electric meter or indicator, Electric motor, Electrode, Elevator, Elevator safety appliance, Elevator safety appliance, Elevator safety brake, Engine, Engines, Extractor, Fabric, Farm gate, Faucet, Fence gate, Fences, Fender, Filter, Finger rings, Fire escape, Fire kindler, Fireproof partition, Fishing tackle, Fly paper, Foods, Forging machine, Fork, Funnel, Furnace, Fuse, Gage, Gage, Gas burner, Gas burner, Gas burner, Gas engine, Gas generator, Gas generator, Gas generator, Gas lighters, Gas meter, Gas tip, Gasket, Gasometer, Gate, Generator, Glass moulding apparatus, Governor, Grader, Grate, Grain mill, Grain mill, Grinding mill, Guano distributor, Handle, Harvester, Hat box, Hat forming machine, Hay rack, Hay rake, Heater for water, Hinge, Horse power, Hose machine, Hose spray attachment, Ingots, Insulation, Ironing machine, Jack, Jar closure, Joint, Kiln or oven, Knob attachment, Lamp burner, Lamp burner, Lamp electric arc, Lamp socket, Lantern, Last, Ledger, Level, Lid holder and kettle drainer, Lifting jack, Liquid dispenser.