

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 This is for our information and not for publication.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.

(7775) C. H. B. asks: What is meant by the repeater of a telephone, and why is it so difficult to construct? A telephone, repeater is an instrument which will take up a message when it has gone as far as it can be heard on the line, and give it energy so that it can go as far again and still be heard as well as it was before. In other words, it is to double the distance to which a message can be sent. There is a "repeater" which is used to connect a metallic circuit to a grounded circuit. This is not difficult of construction and is not probably what you refer to in your question.

(7776) H. I. asks: What are the proportions of corrosive sublimate, sal ammoniac and water for the purpose of depositing a very thin coat of mercury on articles which do not plate readily? A. The proportions of corrosive sublimate and sal ammoniac for the purpose of depositing a thin film of mercury upon articles to be plated is not a matter of any great importance. Water will not dissolve much corrosive sublimate. You may let it take all it can. If the solution is strong, the coating of mercury will be deposited sooner than if it is weak.

(7777) H. B. writes: I am making an automatic circuit breaker for my battery plant, and I would like to ask a few questions in regard to the solenoid and the solenoidal coil. I want the solenoid to trip at 2 amperes; how is the coil constructed? What size wire shall I wind on the coil to be connected in series with the line? What shall I make the solenoid out of? A. Any calculations for an automatic circuit breaker would have very little value. The proper mode of procedure is to make the circuit breaker and then adjust the tension of the spring till the circuit is opened when the current has the strength you wish to set it for.

(7778) The A. & J. Co. writes: We believe there is in use a paper upon which brass will make a mark, something like a pencil mark. If you can tell us what this paper is, where it can be obtained, or who makes it, we will be greatly obliged. A. Paper prepared so that a brass pointer leaves a black mark on it. Dissolve 1/4 ounce pure sodium sulphide and 1/2 ounce sodium hyposulphite in 1 quart rain water; filter the solution, and with it uniformly moisten the surface of the paper; then dry the latter under pressure between clean blotting paper. We do not know where it can be purchased.

(7779) B. T. S. asks: 1. What are the temperatures of air and of the various gases at the ordinary pressure is 312.6 degrees below zero Fah. Under the same condition oxygen boils at -297 Fah., and nitrogen at -317 Fah. The data for various gases can be found in Sloane's "Liquid Air," price \$2.50 by mail. 2. What is the distance in miles from the highest to the lowest points from the plane of the sun's equator reached by each of the planets? A. We have never seen these distances given in any astronomy. You can compute them from the mean distance of the planet and the angle of inclination of the orbit to the plane of the ecliptic. The formula is, perpendicular = base X tangent angle at base. The perpendicular is the distance in miles above the plane of the sun's equator, and the angle is the inclination of the planet's orbit. The mean distances and the angles are given in all astronomies. 3. Where can I purchase a reliable radiometer? A. A radiometer can be purchased from any dealer in physical apparatus. They are not expensive instruments.

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INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending DECEMBER 19, 1899.

AND EACH BEARING THAT DATE. [See note at end of list about copies of these patents.]

Table listing inventions and their patent numbers. Includes items like Advertising and display card, Air compressor, Alloy, aluminum, Amusement apparatus, Animal trap, Ash pan, Assembling machine, Automobile, Bag, Bale holder, Band fastener, Bale tie machine, Bandage, Barrel handling device, Battery, Bed, Book cover, Book holder, Book, Book rest, Boring machine, Bottle, Bottle stopper, Bottle washer, Box, Brake, Brush, Burner, Button setting machine, Button, Car, Car brake, Car coupling, Car fender, Car grain door, Car, railway, Car roof, Cars, Carrier, Carbonating apparatus, Carburetor, Carbruretor, Carriage, Carriage, child's, Cartage, Cash register, Chain adjustment, Chair, Chopping machine, Cigar, Cigarette making machine, Circuit breaker, Clasp, Clock, Clock striking mechanism, Clock winding indicator, Clocks, Coat rack, Coat, Coffer, Corn husker, Corn husking and cutting machine, Corn, Corset, Cutter pin, Cotton bearer safety locking device, Cotton compress, Coupling, Cover fastener, Crayon holder, Cream separator, Cultivator, Curtain rod, Cushion making apparatus, Cutter, Cutting tool, Cycle, Cycle wheel hubs, Decoy, Dental filling material, Dental plugger, Dentist's tools, Desk, Die.

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Table listing various mechanical devices and their prices. Includes items like Disinfecting device for water closets, Disintegrator, Dit ch check, Do or gate banker, Dress shield, Drill, Dust collector, Dyeing, Electric crane, Electric ground detector for constant current arc light circuits, Electric or other wire coupling, Electric transformer, Electric transformer, Electrical snap switch, Electrical transformer, Electrically driven spindle, Elevator, Elevator, Engine wheel traction, Equipment carrier, Faucet, Feed water heater, Fence wires, Filter, Filter, Fire escape, Fire escape, Fire extinguishing compound, Fire refuge, Fireworks body, Fish hook, Floor surfacing machine, Flooring and ceiling, Flower pot molding machine, Fluid pressure engine, Folding chair, Folding gate, Fruit wrapping machine, Fulling mill, Furnace, Furnace, nozzle for feeding fine fuel, Fur, Gag, Garbage crematory, Gas apparatus, Gas apparatus, Gas burner, Gas engine, Gas generator, Gas motor, Gas valve, Gases, Gate, Gate, Gear, Generator, Glass grinding and polishing machine, Glass pipe, Go cart, Governor mechanism, Gram, Grap, Grass cutter, Graves, Grinding machine, Guts, Half-tone plate, Hame fastener, Hammer, Hand, Hanger, Harrow, Harvester, Heater, Heater, Heating and steaming device, Heel, Hem folding machine, Hides, Hinge, Hinge, Hook, Horse breaker, Horseshoe, Horseshoe, Hot air furnace, Hot air furnace, Hub securing device, Hub, Hydrocarbon burner, Incandescent mantles, Ingots, Iron and steel, Iron or steel, Ironing board, Jar fastener, Joint, Journal bearing, Journal box, Label holder, Labeling machine, Ladder shelf attachment, Ladder, Lamp, Lamp, Lamp globe, Last for making overshoes, Last, Lath, Lead oxide, Leather snipping machine, Ledger, Lid and car holder, Linter, Liquid dispensing can, Liquids, Lock, Lock, Lock, Loom, Magnet, Match making, Meat hanger, Merry-go-round, Metal drill, Metal working tool, Metal working tool, Milk test bottles, Mill, Mill, Mining machine, Miter board attachment, Moistener and sealer, Mop, Motor, Mower grass catcher, Mowing machine, Mowing machine, Music leaf turner, Nail, Nut lock, Oil, Oil cup, Oil from water, Oilstone, Oilstone box, Optical surfaces, Opulizer, Ore separator.

(Continued on page 428.)

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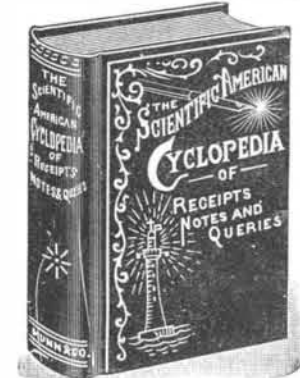


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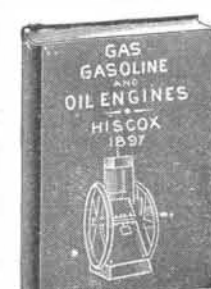


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