

Notes and 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 This is for our information and not for publication.

but of experience. Under good conditions a spark of one inch will be detected at a distance of about a mile.

(9485) L. E. B. asks: 1. Can you recommend to me any books which would be of service to one taking up a course of instruction in physics?

(9482) E. C. I. asks: A man recently made the statement that dew "falls" as rain does. When challenged, he said that recent investigations have shown that the old theory that dew is deposited or precipitated on objects colder than the surrounding air, is wrong.

(9483) W. P. Y. asks: Will you please answer the following questions concerning storage batteries described in SUPPLEMENT No. 845?

NEW BOOKS, ETC.

LLOYD'S REGISTER OF AMERICAN YACHTS. Published by Lloyd's Register of Shipping, 15 Whitehall Street, New York. 12mo.; pp. 500. Price, \$7.50.

The second volume of the American Yacht Register, published by Lloyd's Register of Shipping, fully justifies the promise of the first volume, issued last year, and gives to yachtsmen what has long been needed, a thoroughly comprehensive directory of yachting.

FIRESIDE ASTRONOMY. By D. W. Horner, F.R. Met. Soc., M.B.A.A. London: Witherby & Co., 1904. 32mo.; pp. 105. Price, 60 cents.

This pamphlet forms a simply-worded treatise on some of the little-known and often misunderstood facts in the science of astronomy. It was written for "the man in the street," who simply wishes to learn the reason of certain things that happen in the heavens, but who has not the time or means to investigate such matters for himself.

THE VERMILION IRON-BEARING DISTRICT OF MINNESOTA. With an Atlas. By J. Morgan Clements. Charles Richard Van Hise, Geologist in Charge. Washington: Government Printing Office, 1903. Pp. 462.

This is Volume XLV. of the Monographs of the United States Geological Survey. It is large, well printed upon fine paper, and illustrated by maps, plates, and panoramic views of ore basins and mines.

"Star" Lathe advertisement featuring an image of the lathe and text: "Star" Lathe, Automatic Feed, Screw Cutting, FOR FINE, ACCURATE WORK.

ENGINE & FOOT MACHINE SHOP OUTFITS LATHES TOOLS & SUPPLIES SEBASTIAN LATHE CO. CINCINNATI

Veeder Counters advertisement with an image of a counter showing the number 99728 and text: "Veeder Counters to register reciprocating movements or revolutions. Cut full size. Booklet Free. VEEDER MFG. CO. Hartford, Conn.

TAKE THE NICKEL PLATE ROAD FOR THE ST. LOUIS FAIR. Lowest Rates and many unusual privileges. Special \$15.00 rate on certain dates.

GOODELL-PRATT COMPANY, Greenfield, Mass. Complete with Tail Stock, Tee Rest, Face Plate, Saw Arbor, and Three-Jawed Chuck Milled Bed. 5-in. Swing. Price, each \$7.50.

Automatic Machines FOR FORMING WIRE from coil into shapes similar to ours. We can furnish machines or goods, as desired. BLAKE & JOHNSON, WATERBURY, CONN.

MAKE YOUR OWN GAS ENGINE The Franklin Gas Engine is an ideal motor for practical use, having one-half horse power. Complete set of castings for amateurs to machine and put together.

FRICITION DISK DRILL FOR LIGHT WORK. Has These Great Advantages: The speed can be instantly changed from 0 to 1600 without stopping or shifting belts.

Automatic Hand Winder ever produced. Winds the finest wire. Perfect adaptability for hand or power work with mandrel in view of lathe.

Complete Electric Lighting Plant Price, \$54.00. Dynamos only, for eight 15-cp. lamps, \$28.00; lamps, wire, fixtures, etc., \$26.00; just suitable for residences, small factories, yachts, etc.

THE MIETZ & WEISS KEROSENE and GAS ENGINE burns KEROSENE cheaper and safer than gasoline. Automatic, simple, reliable. No electric battery or flame used.

PALMER MARINE and STATIONARY MOTORS 2 and 4 CYCLE are no experiment, as they are in successful operation in all parts of the world.

A GOOD INVESTMENT For \$1.75 we will send by express (not prepaid), complete N. B. outfit with full instructions for learning TELEGRAPH OPERATING.

photomicrographs of granules and their details.

FREE-HAND LETTERING. Being a Treatise on Plain Lettering from the Practical Standpoint for Use in Engineering Schools and Colleges. By Victor T. Wilson, M.E. New York: John Wiley & Sons, 1903. 8vo.; pp. 105; 13 full-page plates. Price, \$1.

To begin with, great stress is laid upon the fact that good lettering is good design, and is an art not to be acquired by the assimilation of a few simple mechanical principles.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending November 15, 1904

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

Table listing inventions and their patent numbers, including: Advertising blotter, N. L. Bassett... 774,999; Air brake, J. C. Clyde... 775,062; Air brake, compressed, G. E. Houghlin... 775,141; Air brake coupling, automatic, H. O. Beale... 775,286; Alcohol and aldehyde, making, H. S. Blackmore... 774,824; Alternator safety coupling device, Baker & Scott... 774,071; Aluminum, etc., reducing, H. S. Blackmore... 775,060; Ammunition jacket, J. W. Righton... 775,148; Amusement apparatus, J. H. Maguire... 774,917; Animal trap, J. W. Collins... 775,204; Aseptic cartridge, etc., W. E. Ranz... 774,778; Auger or drill for boring rock, etc., E. Cachelin... 774,933; Automatic brake, M. A. Fillmore... 774,913; Automobile, S. C. Beckman... 775,150; Automobile attachment, J. B. Mott... 775,224; Automobile driving gear, G. C. Cannon... 775,223; Awning roller chain box, S. M. Hauser... 774,841; Backing sheet or sling paper, C. Q. C. Leigh... 774,762; Baby jumper, R. Gaines... 775,133; Bag, W. P. Flowers... 775,268; Band machine head, C. A. Cline... 775,125; Bank and clock, combined savings, R. P. Wessels... 775,058; Basin receiving head, catch, A. W. Kurz... 774,846; Bearing, ball, A. Riebe... 774,883; Bed, convertible, M. L. Evans... 775,131; Bedclothing supporter, J. P. Buckley... 775,203; Bedstead, folding, A. Alletty... 775,121; Belt dressing, C. Schlein... 775,119; Bending die, J. H. Barr... 774,818; Bending machine, J. Arber... 775,203; Beverage, E. M. Roberts... 775,214; Bicycle holder or support, J. Speir... 774,895; Billiard cue rest, E. Blackburn... 774,862; Binder, H. P. Jones... 775,220; Binder, loose leaf, G. F. Watt... 775,057; Binder, temporary, H. E. Wendland... 775,099; Binder, transfer, T. R. Eddy... 775,104; Binding or trussing mechanism, sheaf, Roberts & Lawson... 774,894; Bisulphite liquor, apparatus for preparing, Brewster & Parent... 774,869; Block, See Building block... 774,870; Block, T. R. Ferrall... 774,902; Bluing device, A. Acheson... 774,832; Boiler, E. T. Copeland... 775,116; Boiler furnace, steam, A. Q. Nash... 775,257; Book finishing machine, Steel & Kalaba... 775,044; Book, posting proof and balance, Mosser & Root... 774,984; Book support, B. R. Green... 774,756; Boring bar tool, adjustable, J. Johnson... 775,040; Bottle, C. King... 775,059; Bottle filling machine, P. M. Wise... 775,206; Bottle forming implement, Coale & Greensfelder... 774,820; Bottle, non-refillable, C. Coleman... 774,834; Bottle, non-refillable, B. T. Belafield... 774,958; Bottle, non-refillable, J. S. Miller... 775,111; Bottle, non-refillable, L. LeCompte... 775,166; Bottle, non-refillable, C. H. Conlon... 775,185; Bottle, non-refillable, P. Schmick... 775,214; Bottle or pad, flexible water, W. A. Gallo-way... 775,246; Bowling alley, parlor, R. E. Philipp... 774,906; Bowling alley score sheet, G. W. Ben-nethum... 775,285; Box and wallet, combined, E. McDonald... 775,148; Boxes from paper and for filling same with cigarettes, etc., machine for making, E. T. Pollard... 774,950; Brake mechanism, C. K. Pickles... 775,280; Brick kiln, Sanka & Metzner... 775,047; Brick or stone, making artificial, L. F. Kwiatkowski... 775,222; Buckle, Johnson & Pearson... 774,835; Building block, P. Bierlamm... 774,831; Burglar alarm system, electric, C. Coleman... 774,842; Burner bowl and valve, A. B. Hemingway... 775,024; Button, collar, E. J. Baril... 775,136; Camera, J. Goddard... 774,940; Camera brace, J. Goddard... 775,201; Camera, photographic, C. Bornmann... 774,977; Camera, magazine plate changing apparatus for photographic, A. A. Brooks... 775,202; Can top, C. C. Woods... 775,108; Cane or corn cutter, J. B. Gaussiran... 774,967; Car construction, G. L. King... 775,217; Car construction, J. H. Graham... 774,949; Car curtain, C. K. Pickles... 774,952; Car curtain attachment, railway, C. K. Pickles... 774,951; Car draft appliance, railway, W. H. Miner... 775,278; Car draft rigging spring mechanism, J. H. Graham... 775,216; Car fender, C. Goehring... 774,983; Car fender, P. Best... 775,287; Car, mine, F. C. Hockensmith... 775,007; Car seat, S. M. Curven... 774,839; Car underframe, W. P. Bettendorf... 775,114; Car wheel lubricating device, mine, J. N. Maxwell... 774,896; Cars or trains, electric safety apparatus for, W. F. Robertson... 774,788; Carbureter, J. C. Thompson... 775,034; Carpet clamp, L. Grape... 775,188; Carrier, See Sile carrier... 774,826; Carriage cleaning apparatus, P. Butler... 774,827; Carriage shell priming machine, P. Butler... 775,088; Cash register, W. H. Muzzy... 775,188; Cash register, W. F. St. Clair... 775,170; Castings, etc., repairing, J. H. Gravell... 775,231; Cattle guard, J. F. & F. H. Woodin... 774,840; Cement, making white, E. Gogler... 775,095; Cement posts, making, L. H. Stoner... 775,110; Cement work tool, O. M. Jumper... 774,931; Centrifugal machine, J. J. Berrigan... 774,931