

Business and Personal.

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Marine Iron Works, Chicago. Catalogue free. "U. S." Metal Polish, Indianapolis. Samples free. Yankee Notions, Waterbury Button Co., Waterbury, Ct. Handle & Spoke Mch., Ober Lathe Co., Chagrin Falls, O. For bridge erecting engines, J. S. Mundy, Newark, N. J. For Sale—Patent No. 589,068, on Corn Row Marker. Address O. Billingsley, East Cape Girardeau, Ill. Improved Bicycle Machinery of every description. The Garvin Machine Co., Spring and Varick Sts., N. Y. Concrete Houses—cheaper than brick, superior to stone. "Ransome," 757 Monadnock Block, Chicago. If you have a quick-selling novelty, you ought to put it on the market. We will make it for you. Place & Terry, 247 Centre Street, New York.

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The celebrated "Hornsby-Akroyd" Patent Safety Oil Engine is built by the De La Verne Refrigerating Machine Company. Foot of East 138th Street, New York.

The best book for electricians and beginners in electricity is "Experimental Science," by Geo. M. Hopkins. By mail, 44, Munn & Co., publishers, 361 Broadway, N. Y.

Send for new and complete catalogue of Scientific and other Books for sale by Munn & Co., 361 Broadway, New York. Free on application.

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 This is for our information and not for publication.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

(7227) J. R. asks: How many layers of No. 30 double-covered magnet wire shall I use to wind ring armature for dynamo core 4 1/2 in. in diameter, 4 in. long, with 2 1/4 in. hole, composed of 23 washers, with writing paper between, all turned true and bored out? It will take about 300 turns of wire for the first layer and a few more for the next ones. What size wire shall I use for field winding, the magnet waists being 5 1/2 in. long by 1 1/2 in. thick, composed of sheet iron bolted together and faced up smooth? I would like to run the machine in shunt or series, if it would be better. A. For the armature use 200 turns. The number in each coil will depend on the number of commutator bars. For the field use about 1,000 turns No. 26 wire, if shunt wound. We have assumed the voltage to be 110 and the speed to be 1,600 turns per minute.

(7228) P. M. N. says: Can you inform me if there is a process other than the chalk plate by which pen and ink drawings may be reproduced for newspaper work? If so, is it more complicated and expensive? I wish to find a way to make my newspaper cuts in the simplest, cheapest, and most expeditious manner, and desire to install the process in the office. Kindly let me know if there is any way of doing this, and oblige. A. We do not know of any process other than the chalk plate for producing cheap newspaper cuts. The process of photo-engraving is largely used by the New York daily papers. The effect is better than that of the chalk plate. It will be necessary to purchase some books on the subject, as Anderson's "Photo-Engraving," \$5; Schraubstadter's "Photo-Engraving and Copy of Photo-Engraving," \$3.25; Farquhar's "Grammar of Photo-Engraving," \$2; Jenkins' "Photo-Engraving," \$2, which we mail at the prices mentioned. SUPPLEMENT No. 720, mailed on receipt of 10 cents, contains formulas for working the chalk process.

(7229) F. B. H. writes: I am an old reader of your valuable paper, and I want to ask a few questions in regard to the eight light dynamo described in SUPPLEMENT, vol. xxiv, No. 600. My question is this: Can I double the drawings in every respect and get an operative machine? I mean one, if well constructed, that would answer as well as the eight light machine. If any changes are needful, please state what they are. Be sure to state size of wire for armature and field magnets, the winding being the same as in the eight light machine. Should I double the length and diameter of armature? To be short, if I were to double or multiply by 2 all the measurements given, would my machine be out of proportion? A. The sizes given in the drawings of the eight light dynamo can be doubled. This makes the machine 4 times as large. If it is wound with the same sizes and number of turns of wire as the original, it will have the same current in amperes, but 4 times the voltage. If the field is made larger, the armature should be increased in the same degree. Now, if you also use wires twice as thick, but have the same number of turns, the carrying capacity in amperes will be increased 4 times, and the total output of the machine will be 16 times as great. In place of No. 30 wires use No. 14 on armature. In place of No. 18 wire use No. 12 on field.

TO INVENTORS.

An experience of nearly fifty years, and the preparation of more than one hundred thousand applications for patents at home and abroad, enable us to understand the laws and practice on both continents, and to possess unequalled facilities for procuring patents everywhere. A synopsis of the patent laws of the United States and all foreign countries may be had on application, and persons contemplating the securing of patents, either at home or abroad, are invited to write to this office for prices, which are low, in accordance with the times and our extensive facilities for conducting the business. Address MUNN & CO., office SCIENTIFIC AMERICAN, 361 Broadway, New York.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

OCTOBER 26, 1897.

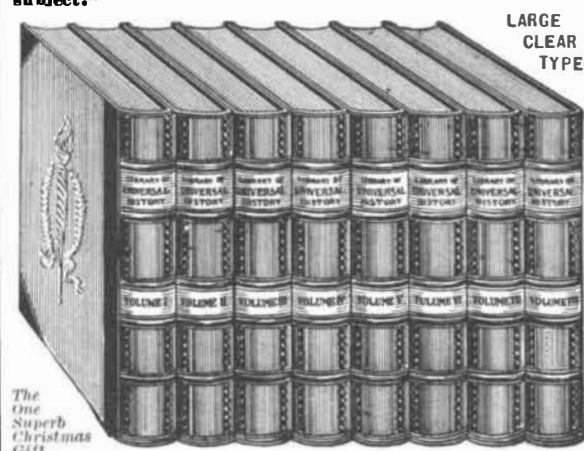
AND EACH BEARING THAT DATE.

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

Table listing inventions with names and patent numbers. Includes items like Aerial machine, Air brake, Air compressor, Air engine, Alarm, Alarm device, Animal trap, Animal trap, Armature shaft support, Automatic switch, Axle box, Baby walker, Badge, Band, Banjo bell, Barrel head machine, Bath and wash tub, Bathing apparatus, Battery, Bed frame, Bedstead fastener, Beehive, Bell, Belt and slat fastener, Bicycle attachment, Bicycle brake, Bicycle handle bar grip, Bicycle lock, Bicycle support, Billiard markers, Binder, Boiler, Boiler cleaning apparatus, Bolster, Bolt, Bone black revivifying apparatus, Book cover, Book cover folding and pressing machine, Bottle, Bottle cap, Bottle, non-refillable, Bottle, non-refillable, Bottle stoppers, Bougie, Bouquet holder, Box, Box machine, Braiding carrier, Brake, Broom, Broom, self-sprinkling, Buckle, Buggy seat, Bulbhead lamp, T. Moodie, Bung and faucet, Burner, Burner, Car brake, Car coupling, Car fender, Car fender and guard, Car protecting door, Car seat, Car, street, Cars, automatic coupling for steam and air pipes, Carburetor, Carding engine, Carding machine, Carpet beater, Carpet beater, Carver, Ceiling block, Cement manufacture, Centrifugal machine, Chain drive, Chain sprocket, Chains, auxiliary link for bicycle drive, Chair, Checkrein retainer, Checks, machine for indelibly marking values on, Cigar mould, Circuit breakers, Cleaner, Clip for tenting, stretching and drying machinery, Clock, Confectionery, Connecting rod, Conveyer, Cooler, Copy holder, Corn sheller attachment, Cotton presses, Coupling, Coupling, Cracker, Crusher, Cultivator, Currycomb and brush, Cutter, Cycle pedal, Cycle propelling and braking mechanism, Cyclometer, Dice throwing device, Direct acting engine, Disinfecting device, Disintegrator or crusher, Door check, Door check and closer, Door check, pneumatic, Drier, Dumb waiter safety clutch, Dynamo, Dynamometer, Egg or cake beater, Electric battery, Electric cable, Electric circuit breaker and closer, Electric conductor, Electric light support, Electric motor regulator, Electrical circuit closer, Electrical resistance device, Elevator safety device, Enameling, C. Comstock, Engine, Rotary engine, Engine, pump or compressor, Envelope, Wash beecher.

SPECIAL HISTORY CLUB For NOVEMBER

The purpose of the Club has been highly commended on all sides. One letter, which stands for many others, comes from the Hon. Wm. T. Harris, LL.D., U. S. Commissioner of Education, Dr. Harris, after warmly praising the library itself, says: "I appreciate highly the purpose of the Club, which is to stimulate the study of history among the people. This knowledge is evidently the most important kind of self-knowledge. I wish the Club all success in extending the distribution of such a valuable work on this subject."



OUR CLUB has proved so popular and the Club price so convenient terms so attractive and satisfactory that the demand has exhausted our original edition of the

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We are gratified to announce that the publishers have consented to supply another edition (limited in number) which will be distributed to those who apply during November. The sets will be allotted in order of application, but in any event the Club will close November 30th and the price will be advanced.

with the Club, a few of these sets have been set aside temporarily for SCIENTIFIC AMERICAN readers, but APPLICATIONS SHOULD BE SENT IN AT ONCE in order to participate in the distribution at the present very low price.

WHAT THIS GREAT WORK REALLY IS. The three great epochs, Ancient History, Medieval History and Modern History, naturally claim the principal portion of the Library, but Recent History also receives the attention its importance and interest demand, and the record of events is brought right down to the present year. The History of Civilization and The Philosophy of History are more fully treated than in any other work ever published in this country. The Illustrations, from the works of such great artists as Meissonier, De Neuville, and Doré, are numerous and brilliant, marking the turning points of history, and The Historical Maps (there are nearly 100 of them) are more abundant and accurate than in any other work, native or foreign. In every one of those vital features which constitute a comprehensive, accurate, instructive and valuable history of the world the Library is incomparable. It is the Largest, Latest, Best.

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SEE HOW LATE IT IS. Alaska is the subject of special treatment, which includes the history of the gold discoveries in the Klondike and other regions, with a new double-page map in four colors, from the latest U. S. Government and Canadian surveys and reports, showing the different routes to the gold fields, with photographic reproductions of scenes on the Yukon River.

WORDS OF PRAISE FROM THOSE WHO HAVE RECEIVED THE WORK. Pres. E. Benjamin Andrews, of Brown University, says: "The educational value of the 'Library of Universal History' is sure to be very great." Dr. S. G. A. Brown, Shippensburg, Pa., writes: "My set arrived to-day. I am more than pleased with it. It should be in every home and public library in the land." Ex-Pres. Cleveland writes: "This history will fill an important place among publications intended to give wider familiarity with historical literature." W. W. Lewis, Moorland, Mich., writes: "The history arrived in good condition. I am delighted with it. I would not sell it for double the cost, if I could not get another set."

OUR CLUB controls for the benefit of its members exclusively, the desirable first edition of this splendid Library, and by arranging for the entire edition is enabled to supply the sets (while they last) in three styles of binding at a saving of about 50 per cent of the regular subscription price, according to the style selected, besides affording easy terms of payment. Those who enjoy the historical and biographical articles in the great magazines will thoroughly appreciate the superb Library of Universal History, and no teacher, student, member of a historical club or occasional reader of our club offer. The demand has been so great for these sets on the extremely favorable terms offered that the entire first edition has been exhausted, and a special limited edition arranged for, which will be distributed to those who apply during November. It is therefore advisable to apply at once for full particulars regarding the work and the club plan and price. The club will also send you free an interesting set of specimen pages and illustrations, including full-page portraits of Herodotus, Franklin, and President McKinley and his Cabinet, smaller portraits of six great statesmen, also text and illustrations of the Klondike, Alaska, General Weyler, Nansen the explorer, with eight reproductions of famous historical scenes, a large folding map of Cuba, a new double-page map of Alaska, photographic scenes on the Yukon River, and a chart of the Klondike River and its tributaries. Address all communications to

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Table listing various mechanical parts and their prices. Includes items like Envelope, Excavations for watercourses, Faucet, Feed box, Feed water heater, Feed water purifier, Fence, Fence post, Fence stay machine, Fencing machine, Fender, Fifth wheel, Filter, Filter, Speer & McLean, Filter, G. H. Ward, Fire alarm, Firearm sight, Fire escape, Fire lighter, Fire cleaning machine, Fish hook book, Fishing reel, Fishing rod, Flat iron cleaner, Flower pot attachment, Flux for welding metals, Folding box, Folding chair, Fruit drier, Fruit squeezer, Furnace, Furnaces, protective arch plate for mouths of boiler, Game apparatus, Game device, Garment supporter, Gas burner, Gas engine, Gas generator, Gas shutoff, Gate, Gate, See Irrigating ditch gate, Sliding gate, Gate, D. Ogilvie, Gear case for sprocket and chain drives, Gear for rolling stock, Gear-moulding machine, Gear, reversing, Generator, Governor, engine, Grain drier, Grain elevating or dumping apparatus, Grain purifier and drier, Graphoscope, Gun barrel, Gunpowder, making, Hair drier, electric, Hammer, Handle, Hanger, Harvester, corn, Harvester cutting mechanism, corn, Harvester elevator, Harvester knottor, Hasp lock, Hat and clothes rack, Hat and coat lock, Hat fastener, Heater, Hook and eye.

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