

fence all the way. Have no snow here and the atmosphere is very dry. A. We cannot recommend any insulator. Undoubtedly hot paraffine wax would be useful, but too expensive. We think that in your climate no insulator would be requisite.

(7131) M. J. S. asks: 1. What is the difference between high and low voltage lamps (incandescent)? Is it in size of carbon filament? A. The difference is in the resistance of the filament, and therefore in its cross section. They are designed to pass about 3 watts per candle power, and hence for higher voltages pass less current. 2. What would be a simple process for extracting gelatine from bones? Would it consist in pulverizing and boiling and then evaporating the solution as in making soup, or could not a chemical solvent, as HCl, be used to disintegrate the lime and so liberate the gelatine, or would this process render it unfit for cooking purposes? A. The hydrochloric acid treatment could be applied, but would involve difficulty in disposing of the excess of acid and salts and would involve expense. 3. What is meant by polarization of batteries? A. It means properly the accumulation of material, generally hydrogen, about the negative plate, so as to prevent generation of E. M. F. Exhaustion of the depolarizer is the cause, and really is a good expression for depolarization.

(7132) T. P. W. asks: Will you be so kind as to explain, if possible, for the benefit of one of your readers, the process by which a sheet of paper may be split so as to preserve both sides. For example: A page of a magazine has cuts on each side which it is desired to preserve so both can be mounted. A. The paper to be split is pasted between two sheets of compact strong paper. The best flour paste should be used. Mucilage is unreliable. When nearly dry, if the two outer pieces of paper are pulled apart, the central one will split, and one-half of the central piece will adhere to each. By soaking in water they can be removed. Some kinds of paper work better than others. If the outer paper is of a loose texture, it may split instead of the desired one. But the best plan is to paste a piece of cloth to each side of the sheet to be split. When dry, violently and without hesitation pull the two pieces asunder, when part of the sheet will be found to have adhered to one and part to the other. Soften the paste in water, and the pieces can be easily removed from the cloth. The process is generally demonstrated as a matter of curiosity, yet it can be utilized in various ways. If we want to paste in a scrap book a newspaper article printed on both sides of the paper, and possess only one copy, it is very convenient to know how to detach the one side from the other. The paper, when split, as may be imagined, is more transparent than it was before being subjected to the operation, and the printing ink is somewhat duller; otherwise the two pieces present the appearance of the original if again brought together.

(7133) L. A. McC. writes: 1. In the description you say that No. 18 (A. W. G.) soft iron wire should be used in the core of the armature and that No. 18 cotton covered copper magnet wire should be used in the coils of the armature and that No. 16 magnet wire should be used in the coils of the field magnet, and then in the dimensions of motor tabulated below you give No. 16 wire to be used for both armature and field coils. Please give me correct numbers of all. A. Use No. 18 copper wire (magnet wire) in armature winding; rest as given in article. 2. Is black adhesive tape, such as is used by line men, the proper tape for insulating the cores? A. Such tape as you specify is excellent for the purpose. 3. Should the cotton covered wire be single or double covered? Which is best? A. Use double covered wire. 4. Is there any soft iron wire used expressly for the purpose of making armature cores? If so, give name proper. Or would such wire as is used for bracing stovepipes up (which is an annealed wire and very soft and tough) be good, and is there anything particular about it not being a size or two larger? A. Stovepipe wire will answer every requirement for cores. The size is not very material; in general, the finer, the better. 5. Should the Russia iron in the core of field magnet be wound in continuous layers with ends abutted or should it be in separate layers? A. It is quite immaterial. Wind it as it comes, simply aiming at a neat shape.

(7134) L. D. asks: What size motor running to its full capacity will a storage battery run that has a capacity of ten volts and two and two-fifths amperes? A. Approximately, one-thirtieth horse power.

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INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

MARCH 9, 1897.

AND EACH BEARING THAT DATE.

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

Table listing inventions such as Acetanilid, apparatus for making sulfure, Deruelle, advertising and vending machine, F. M. Archer, 578,438.

Table listing inventions such as Bath tubs, device for supporting bathers in, C. G. Friedlaender, 578,327; Bearing, anti-friction, H. Briggs, 578,424.

Table listing inventions such as Hair switch, J. Y. Borden, 578,623; Hair tonic, M. J. Fleming, 578,632; Hanger, see Trousers hanger, 578,653.

Table listing inventions such as Tire bolt removing device, Hertzel & Rogers, 578,636; Tire repairer, pneumatic, K. Wehl, 578,433; Tire tightener, H. Romber, 578,525.

DESIGNS.

Table listing designs such as Badge, H. S. Robbins, 26,722; Bicycle frame, tandem, H. G. Pigard, 26,728.

TRADE MARKS.

Table listing trade marks such as Asphalt felt, T. J. Hind, 26,654; Beer,lager, trade of J. F. Eckert, 26,681.

LABELS.

Table listing labels such as "Albumenized Food" Smith, Kline & French Company, 6,547.

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