



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 This is for our information and not for publication.

(9733) J. F. S. asks: Will you kindly explain how it is that makers of dry batteries rate their cells in amperes? Thus, they claim that a cell will show 14 or 16 amperes.

(9734) G. O. asks: Will you kindly state in your Notes and Queries if the dynamo described in the SUPPLEMENT No. 600, by George Hopkins, can be made into a 110-volt and 5-ampere machine, the size and amount of wire?

(9735) T. G. asks: I refer to your Notes and Queries column March 25, page 248 (No. 9565). You say: "Since the tank weighs 10 pounds an addition of 73 1-3 pounds in the tank will sink it."

less compressible than any metal or other substance which may sink in water. The references we have given above furnish you the figures of compressibility of water, etc.

(9736) W. I. H. asks: 1. What is the heat conductivity of carbon such as the pencils used in arc lamps? What order does it have in the scale of conductors? A. The conductivity of carbon for heat is 0.000405, when copper is 1.0405 on the same scale.

(9737) L. F. S. asks: I believe that astronomers consider the planet Mars to be an old planet on account of there being very little water on it. Then, if this is the case, is the water gradually getting less on this world of ours, and if so, by what means, as when evaporation takes place on the ocean, this moisture falls again in rain.

(9738) C. M. G. writes: Please give the solution and answer to the following problem in the SCIENTIFIC AMERICAN, also the rule to solve this class of problems: A siphon pipe 4 inches in diameter is laid in a small mountain stream to convey the water downstream (for a certain purpose) for a distance of 250 feet.

the pipe falls 4 feet, thus leaving the outlet of the siphon 8 feet below the surface of the water impounded. The distance from surface of the water to the pax is one foot, altitude 4,500 feet. What is the pressure per square inch at the intake end of the siphon? A. We would say that if the water in the siphon were not flowing, the pressure at any point in the system could be readily found.

(9739) W. W. S. asks: Will you please explain why an incandescent light filament in circuit on an alternating current of about 125 volts swings back and forth when an ordinary horseshoe magnet is held with the north and south pole in a horizontal plane, while if these poles are held with their centers in a vertical one, no vibrations result?

(9740) A. L. asks: Kindly oblige me by answering the following questions: 1. What is best material to make a magnet of? 2. What is the best means of making a magnet? 3. Does the north pole of a magnet repel the north pole of another magnet in practice the same as in theory—I mean on a large scale?

(9741) A. G. L. asks: What is the capacity of the condenser used in a Ruhmkorff coil with 2-inch spark? Is it possible to connect two condensers in multiple so as to make one of double capacity? How many volts would it take to run a 2-inch Ruhmkorff coil to its full capacity? Is there any possible way to find out how many vibrations a second an interrupter can make?

(9742) W. C. W. asks: 1. What metal or substance transfers electricity most quickly and easily by induction? A. There would not seem to be any considerable difference in the metals in the transfer of electrical induction, but electricity is not transferred by induction.

for this condition was static electricity, a name which has disappeared from the recent books. This is the condition of the electrical eel. These matters are well and fully treated in the new book just issued, "The Electrician's Handy Book," price \$3.50.

NEW BOOKS, ETC.

THE REVELATIONS OF NATURE. By Leonidas Guillemet. San Francisco, 1905. Published by the author. 16mo; 258 pp. Price, \$2.

This book contains a philosophic essay in three parts which treat of perpetual motion; forces of matter and celestial mechanism; and life and spirit, the infinite, and immortality. The author does not claim to be a man of science, although science undoubtedly has attracted him greatly and caused him to delve in and speculate upon some of the mysteries of nature which have been heretofore variously explained, or for which no suitable explanation has been found.

While people well informed on the subject in question may not agree with the author in some of his deductions, nevertheless they will find his book an interesting, clearly written little volume containing fresh ideas and speculations not only on perpetual motion, but also on the workings of nature in various directions and the operation of the universe as well.

PROPERTIES OF STEEL SECTIONS. By John C. Sample, C.E., M. Arch. New York: McGraw Publishing Company, 1905. 8vo.; pp. 121. Price, \$3.

This is a reference book for structural engineers and architects. It includes many tables of moments of inertia, and radii of gyration of built sections, etc., besides examples of sections selected from monumental structures, unit stresses, safe loads for columns, plate-girder design, design in timber, and the like. The book consists chiefly of carefully calculated tables, which will save the designer much preliminary figuring in all standard designing.

HYDRAULIC POWER ENGINEERING. By G. Croydon Marks. New York: D. Van Nostrand Company, 1905. 8vo.; pp. 388. Price \$3.50.

This volume, which is a successor to a smaller book on Hydraulic Machinery published some four years ago by the author, is a practical manual on the concentration and transmission of power by hydraulic machinery. The author first gives an outline discussion and description of the main points and principles to be noted by engineers in designing or constructing apparatus for the utilization of water and the transmission of power.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending August 15, 1905

AND EACH BEARING THAT DATE

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

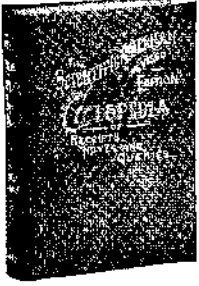
Table listing inventions such as Acid into stearic acid, converting oleic, A. de Hemptinne, 797,112; Adding and printing machine, C. Wales, 797,032; Addressing machine attachment, E. D. Belknap, 797,092; Advertising curtain device, F. C. Chapman, 797,097.

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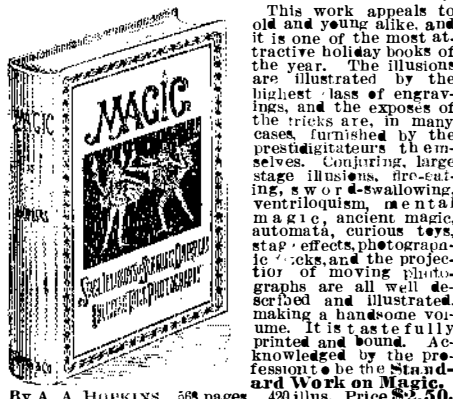
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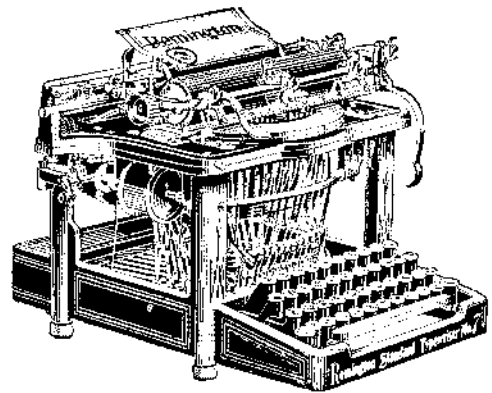


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