

wound, then give twice the current the armature wire would stand and apply Ohm's law as above.

(6104) W. S. E. asks: 1. Introducing a resistance into the field of the dynamo, are the E. M. F. alone reduced or is the E. M. F. and C. both reduced?

(6105) H. G. K. asks: Kindly inform me of the method of obtaining the amount that a safety and high wheel is geared to.

(6106) B. asks: (1) how to construct a simple, long-lived, effective battery for bell work.

(6107) R. W. R. asks: 1. What should be the voltage and amperage of a current to run 641 motor to best advantage, the armature being wound with No. 16 wire, having 4 layers of 7 convolutions each to each coil?

(6108) G. F. D. asks: 1. Which has relatively the most conductivity, viz., a No. 16 galvanized iron wire or a common fuse wire of exactly the same size as iron wire?

(6109) L. P. asks: 1. In what number of the SCIENTIFIC AMERICAN was the induction coil for alternating currents described?

(6110) R. W. S. asks: 1. Will you please inform me how to find the amperes of an incandescent lamp or an arc lamp, only knowing the candle power?

(6111) E. F. B. asks: In your issue of May 26 I find an article on "Hard Water," from The Asclepiad.

(6112) W. A. C. writes: In your issue of May 26 is an article by Sir B. W. Richardson, "How to soften Hard Water by the Use of Lime."

(6113) W. P. C. writes: What difference does it make if a receiver is wound to 75 ohms? Will it work as well on a short line as it does on a long line, and what does the resistance have to do with the working of the telephone?

working is due to the turns of wire; if the resistance could be zero, it would be all the better.

(6114) W. A. H. writes: If two electromagnets are mounted on a base, each provided with an armature, connected to the same lever, the lever pivoted between the two magnets (walking beam style), and one pair of magnets excited by a battery to an attractive strength of 2, which will hold the seesaw lever against it, or as close as an ordinary telegraph sounder armature is held?

(6115) E. S. asks what difference there is between an electric horsepower and the horse power relating to steam engines.

(6116) H. R. E. asks: In purifying a mineral (clay) I am using hydrochloric acid. What will entirely remove the acid or neutralize its effect?

(6117) F. P. R. asks: By whom and when was the first piano made on this continent? A. Jonas Chickering was the pioneer maker, beginning in 1822, and exposing his first piano for sale in Boston April 15, 1823.

(6118) J. W. B. asks how to obtain the gold from a solution of its alloys in nitro-hydrochloric acid. A. Ferrous sulphate, oxalic acid, and many other reducing agents will precipitate metallic gold from the solution of its chloride.

(6119) C. A. C. writes: I have just finished an 8 light dynamo described in SUPPLEMENT 600 and it works to perfection. 1. How can I make a nickel plating tank, and what is it painted with inside?

(6120) J. C. P. and S. write: We have built the 8 light dynamo as described in SUPPLEMENT, No. 600, winding field magnets each leg with four layers No. 12 magnet wire.

(6121) W. L. B. asks: Which would be the most economical to use as power, compressed air "dry" or a vacuum power? In producing vacuums, is there a loss corresponding to the heat generated in compressing dry air?

INDEX OF INVENTIONS For which Letters Patent of the United States were Granted June 12, 1894, AND EACH BEARING THAT DATE.

Table listing inventions with their patent numbers and dates, such as 'Adding machine, J. P. Royall', 'Advertising match box, J. J. Harrison', etc.

Main index of inventions listing various mechanical devices and their patent numbers, including 'Bevel, J. T. Langlais', 'Bicycle, A. H. Bishop', 'Binding and harvesting machines, sheaf carrier', etc.

Continuation of the main index of inventions, including 'Measuring and recording electric currents, apparatus for, W. Thomson', 'Mechanical movement, R. Sterling', 'Metals, making resinsates of, F. Pirschl', etc.

DESIGNS. Table listing registered designs with their numbers and dates, such as 'Badge, W. C. Finck', 'Bath tubler, W. C. Peet', 'Bottle, W. L. Jubring', etc.

Toy cap exploder, C. A. Hotchkiss. 23.356
Type border, E. B. Fox. 23.341
Vault light lens, P. Schwickart. 23.328

TRADE MARKS.

Antipyretic and anodyne powders for headache 24.867
and neuralgia, F. A. Wheeler.
Baking powder, Pasquier & Stankard. 24.856
Baking powder, Scudder-Gale Grocer Company. 24.856
Baking powder, F. W. Young. 24.857
Beer, Lager, J. Conrad. 24.852
Bicycles, E. K. Tryon, Jr. & Company. 24.880
Boilers, compound for removing scale from, W. M. Plantz & Company. 24.849
Bonbons and chewing gum, Royal Remedy and Extract Company. 24.844
Bread, J. H. Altman. 24.862
China, including plumbers' and toilet ware, vitreous, Maryland Pottery Company of Baltimore City. 24.876
Chocolates and cocoas, Russ-Suchard et Cie. 24.853
Coal saver, chemical, Household Friend Company. 24.850
Coffee, Union Pacific Tea Company. 24.854
Cotton plaids and stripes, Eagle and Phenix Manufacturing Company. 24.839
Cream of tartar, John Bird Company. 24.858
Dental preparations, J. A. Bermudez. 24.846
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Flour, wheat, Kunhardt & Company. 24.860
Harness snaps, J. C. Covert. 24.879
Hats, straw, M. Kurzman & Son. 24.857
Matches, wooden and paper, American Safety Head Match Company. 24.874
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Medicine and tonic, nerve, Magic Medicine Company. 24.868
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Pharmaceutical preparations, S. Raulauer. 24.836
Pills, C. L. Hood & Company. 24.865
Polish, metal, Harvey Chemical Company. 24.848
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Remedy for chilblains, Lenz Ku-Ra-Tiv Company. 24.873
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Remedy for rheumatism, J. Keen. 24.872
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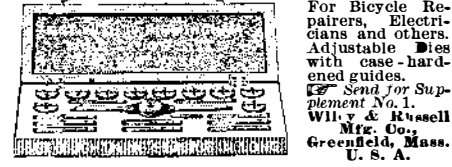
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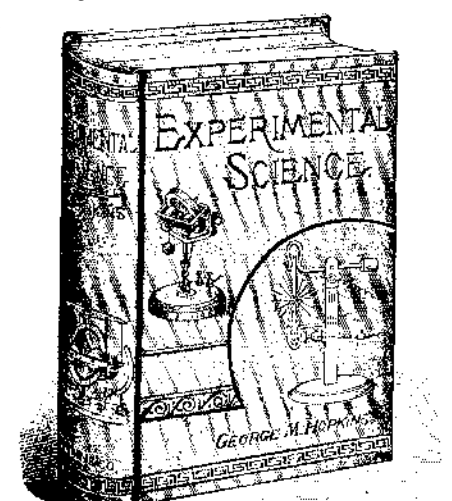
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