

(4035) V. L. C. asks: 1. How to make a perfectly smooth dead black varnish for brass, etc.?

(4036) J. B. says: Kindly answer through SCIENTIFIC AMERICAN what causes clicking in pipes when steam is turned on?

(4037) W. L. asks: 1. Would a bar magnet be as strong magnetically if tempered hard only at the ends (say one-fifth of the length at each end) as it would be if tempered for the full length?

(4038) E. D. asks: 1. Will an ammeter register equally as well on the positive as on the negative wire?

(4039) E. E. W. asks: Will you please answer the following question: Is there anything (about 1 3/8 inch thick) I could place between a staple shaped magnet and a flat piece of steel to keep it from drawing?

(4040) C. H. F. asks: 1. Is light light before it reaches the atmosphere, or is it produced by transmission through the air?

(4041) E. F. L. asks: What is black manganese? For what purpose is it used, and what is its value?

(4042) A. B. C. asks (1) from what Glauber salt is obtained. A. By treating salt with sulphuric acid and distilling off the hydrochloric acid.

(4043) F. T. K. writes: 1. I made a battery of the Chaperon-Lalande type, by plugging a piece of two inch gas pipe in one end and fitting a cap to the other, through which I put the zinc (a 3/4 inch x 6 inch rod) insulated from the pipe.

wrong? A. Your trouble is due to the use of cupric hydrate instead of oxide. Make the oxide by heating thin copper plates to red heat in the air, and after cooling beat off the oxide and reheat until it is all oxidized.

(4044) T. H. B. H. says: We have a 20 horse engine, 30 horse boiler, run two 60 saw gins, jet and pump, and until recently a friction pulley press. We have put in instead a "direct steam press," 30 inch cylinder.

(4045) E. E. B. asks: If a man with a rifle and one with a cannon are placed any distance apart within range, and both fire at the same time toward each other, the cannon ball to travel twice as fast as the rifle ball, the rifle ball penetrating the cannon ball all the time until it is brought back to the place it started from, does the rifle ball at any time come to a dead stop?

(4046) H. M. asks: 1. What pressure per square inch is exerted by illuminating gas compressed to one-tenth its original bulk?

(4047) V. M. asks: 1. Are engineers licensed as to grade?—for instance, a man might be capable of tending boiler and the common slide valve engines, but not the high grade of Corliss.

(4048) B. R. W. asks the construction of a battery in which salt-peter is used for the depolarizer. Is it a good closed circuit battery, or is it only suited for open circuit?

(4049) L. S. G. says: Would like to know if you could let me know of some way to give small steel wire springs a good spring temper?

red and tip the springs into the water. Dry and spread them on a wire sieve and dip in boiling linseed oil for 2 or 3 seconds and again cool in water.

A. Y. O. asks how to fine wine.—L. B. K. asks how to color brass a fine blue.—S. L. A. asks for a hair tonic or hair invigorator.—J. W. wants an iron paint.—Old Sub. asks: Will you oblige by giving the receipt for making the beautiful gloss that is found on collars and cuffs?

Answers to all of the above queries will be found in the "Scientific American Cyclopaedia of Receipts, Notes and Queries," to which our correspondents are referred.

TO INVENTORS. An experience of forty 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.

INDEX OF INVENTIONS

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

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 Wadding, J. Feinbend..... 468,480  
 Washboard, J. Maleckar..... 468,410  
 Washer. See Nut lock washer, Ore washer.  
 Washer cutter, R. P. Frist..... 468,613  
 Washing machine, S. Barrett..... 468,477  
 Watch case pendant, F. Sternberg..... 468,707  
 Watch cases, case or bezel for, Mink..... 468,740  
 Watch cases, machine for ornamenting, F. Mink..... 468,748  
 Water gauge, W. O. Schumann..... 468,508  
 Water tube boiler, J. E. Henshall..... 468,501  
 Weigher, grain, T. S. Pearson..... 468,466  
 Weight lifting attachment, J. W. McHenry..... 468,661  
 Wells, apparatus for treating petroleum, W. O. Robbins..... 468,385  
 Wells, fishing tool for deep, W. F. Boyd..... 468,738  
 Wells, strainer point for driven, C. A. Holland..... 468,343  
 Wheat separating machine, H. J. Livergood..... 468,598  
 Wheel. See Car wheel, Gear wheel, Vehicle wheel.  
 Wheel, A. M. Reeves..... 468,397  
 Windlass, J. H. Fletcher..... 468,523  
 Windmill, A. H. Carpenter..... 468,541  
 Wire twisting wrench, adjustable, C. E. Wintrose..... 468,718  
 Wool washing machine, F. G. & A. C. Sargent..... 468,453  
 Wrecking machine or stump extractor, J. Cornelius..... 468,644  
 Wrench. See Pipe wrench, Wire twisting wrench.  
 Wrench, T. A. Ferguson..... 468,648

DESIGNS.

Burial casket, J. D. Ripson..... 21,330  
 Cracker, teething, W. L. Johnson..... 21,337  
 Key tag, C. McIntosh..... 21,338  
 Spoon, C. G. Wentge..... 21,340

TRADE MARKS.

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 Beer, porter, and ale, bottled lager, Pooley & Vito..... 20,709  
 Brick, W. W. Sherwin..... 20,711  
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 Eggs, S. S. Long & Bro..... 20,693  
 Electrical conduit tubes, Interior Conduit and Insulation Company..... 20,709  
 Kerose, W. A. Chipman..... 20,692  
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 Washing machines, L. H. Heaps..... 20,708  
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 Wines, Averous Freres..... 20,686, 20,687

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