

E. M. C. asks: 1. Can you inform me of any process by which steel springs exposed to the action of sea water may be prevented from rusting...

A. H. D. asks: 1. What is the process of japanning on iron to get a finish like that on sewing machines?

W. B. says: "If a galvanic battery consists of a number of cells, each cell containing a lead and a zinc plate..."

E. V. asks: Is there any trustworthy means of making benzine or benzoline non-explosive?

J. L. A. asks: 1. How is adhesive court plaster made? A. Dissolve 1 part of isinglass in 10 parts of water...

J. B. H. asks: How can I remove black ink stains from a white plaster wall?

D. M. asks: What metals expand on cooling? A. An alloy that expands on cooling may be made by melting together 2 parts antimony...

C. D. M. asks: What gums or equivalents are insoluble in coal oil?

V. R. C. asks: What quantities each of acetate of lime, sulphuric acid, and water are necessary to make acetone...

J. O. T. asks: 1. How can I remove common India ink from mechanical drawings without injuring the paper?

F. M. D. asks: Is there any invention, patented or otherwise, for the purpose of aiding pedestrianism, such as a spring attached to the foot?

L. E. G. asks: 1. What is the idea of amalgamating the zinc of a galvanic battery?

G. B. G. asks: What is the composition and mode of preparation of the enamel, black and white, used on clock and watch faces...

A. & B. ask: If there were a hole through the earth, and a ball were dropped in the hole, would the ball ever stop, or would it pass through and through as a pendulum swings?

F. L. K. asks: How can I find the weight of a solid ball 15 inches in diameter?

F. P. H. asks: Why does a star, seen with the naked eye, look irregular?

J. C. asks: How can I exterminate red roaches? A. Take flowers of sulphur 1/2 lb., potash 4 ozs. Melt in an earthen pan over the fire...

J. A. asks: How can I bronze small iron castings? A. Take 1 pint methylated kerosene, 4 ozs. gum shellac, 1/2 oz. gum benzoin...

J. A. asks: How can I separate albumen from blood? A. By receiving the blood in moderately deep vessels and allowing it to coagulate...

R. M. W. asks: What does "Patented, S. G. D. G." mean? The paper on which I saw it came from Europe, and I think the article patented is a French or Belgian invention...

C. W. says: I had occasion to mend a topaz ring, and I did it in the usual manner, using a round stick of charcoal and imbedding the stone in plaster of Paris...

H. G. B. asks: 1. Will platinized silver do for the negative metal of a Grove battery?

G. H. J. asks: 1. What are the so-called glass cards made of, and how are they colored?

J. D. says: I produce an orange color with bichromate of potash, alum, litharge, acid, and soda. What must I add to deepen it?

W. V. D. asks: How much worm surface is required to condense a gallon of proof spirit in an hour?

M. T. asks: Why does coffee, either ground or in the berry, even if closely kept in a tin can, lose its aroma, and become disagreeable and bitter?

W. C. asks: What is tungstate of soda, recommended for making clothing unflamable?

S. B. R. asks: On what stuffs can the aniline dyes be used? How can I dye cotton goods with aniline black?

H. A. C. asks: What is the best manner of sticking tin foil to glass for Leyden jars, disks, etc.?

P. says: I wish to be an engineer. Which would be the best city for me to go to, to get instruction?

E. B. W. says: On page 43 of your current volume, W. S. B. asks if a block can be cast on all sides. It is quite common for mechanical castings to be cast in the most positive manner...

J. S. says, in reply to L. and H., who have difficulty in burning sawdust: "I have a boiler of similar dimensions and I burn my sawdust successfully. I use a fan (costing only about 12 or 15 dollars) of 24 inches diameter, with 6 inch wings, driven at 1,000 revolutions per minute..."

A. J. K. says, in answer to J. W. B.'s query as to calculating machines: There are machines which add, divide, subtract, and multiply six figures into six figures. "I used one in San Francisco. There are two in use in that city now. They are manufactured in Paris."

J. C. says, in reply to J. F., who inquired about a certain clock with a glass dial on which the hands turn without any apparent motive power: "I believe the timepiece is nothing but Robert Houdin's clock, which works as follows: At one end of each hand there is a large disk; these seem to be only counterpoises, but, in reality, they contain concealed watch movements, which, working on the center by means of appropriate levers, cause each hand to move on the dial and mark the correct time in a mysterious manner."

MINERALS, ETC.—Specimens have been received from the following correspondents, and examined with the results stated:

C. L. McC. & Co.—Your specimen is galena in quartz.

H. M. H.—Your specimens contain copper and iron. 2 and 4 contain carbonate of copper and copper pyrites. No 1 is white pyrites. No. 3 resembles quartz and white pyrites.

G. E. A.—Your specimen did not reach us. Send us a small sample.

T. M. B.—This is a specimen of earthy chlorite, consisting chiefly of silicea, magnesia, alumina, and oxide of iron. The term chlorite is derived from a Greek word meaning green, on account of the greenish appearance of the mineral. It is of no economical importance, although the compact variety was employed by the Indians for pipes.

J. W.—Your specimens are ochers, that is, clays charged with oxide of iron, to which their colors due. The red especially seems to be a valuable mineral paint. You should correspond with some one who is interested in the use or sale of such articles.

S. B. B.—Your mineral is decomposed hornblende.

J. W. Jr.—The enclosed is blue clay, a silicate of alumina. When clay burns white, it is used in the manufacture of white earthenware.

B. F. M.—Dark colored clay, a silicate of alumina.

M. R. L.—The minerals sent are oxide of iron, chiefly micaceous oxide, so called from its occurring in small bright spangles like mica. From its glimmering, splendent appearance you have probably mistaken it for silver. The other ores are galena, a valuable ore of lead. This sometimes contains a paying quantity of silver but this can only be estimated by an analysis.

J. E. G.—1, epidote; 2, quartzite; 3, copper pyrites; serpentine; 5, chlorite schist; 6, carbonate of lime.

G. S. R. asks: How can I reduce leather, buffalo hides, for instance, to a pulp, which will set into a hard and durable mass?—A. M. asks: How can I find the weight of a person's head without cutting it off?—J. V. B. asks: Is there any substance with which I can coat cardboard, to make a white slate, to be written on with a lead pencil?—G. W. F. asks: 1. Can you give me a rule for setting out circular saw teeth? 2. How can I temper a burr or gumming out saw teeth?—C. P. asks: In taking impressions of the human head in plaster, I have trouble in making the hair and whiskers stand out naturally. What can I do to remedy this?

COMMUNICATIONS RECEIVED. The Editor of the SCIENTIFIC AMERICAN acknowledges, with much pleasure, the receipt of original papers and contributions upon the following subjects:

- On the Morse System of Telegraph Signals By W. L.
On Utilizing Coal Dust. By J. H.
On the Preservation of Timber. By J. H. M.
On the Principles of Ventilation. By C. A. W.
On Asphalt. By C. F. D.
On the Relative Attraction of the Earth and Sun. By W. M. D.
On a Substitute for Mica in Stoves. By A. A. H.
On Mr. R. A. Proctor and the Million Dollar Telescope. By S. H. M. Jr.
On Preventing Incrustation in Boilers. By E.
On Ocean Towers. By W. K.

Also enquiries from the following: S. H. W.—H. C. A.—H. S. W.—H. B.—W. W. A.—L. A. C.—G. S.—W. W. S.

Correspondents in different parts of the country ask: Who makes a centrifugal clothes wringer? Who makes smoke-consuming devices for boiler furnaces? Who makes corn-shucking machines? Who makes wood-working machinery bits? Who makes an instrument, other than the ear trumpet, for helping the partially deaf to hear? Makers of the above articles will probably promote their interests by advertising, in reply, in the SCIENTIFIC AMERICAN.

Correspondents who write to ask the address of certain manufacturers, or where specified articles are to be had, also those having goods for sale, or who want to find partners, should send with their communications an amount sufficient to cover the cost of publication under the head of "Business and Personal" which is specially devoted to such enquiries.

[OFFICIAL.] Index of Inventions FOR WHICH Letters Patent of the United States WERE GRANTED IN THE WEEK ENDING January 13, 1874, AND EACH BEARING THAT DATE. (Those marked (r) are reissued patents.)

Adding machine, C. G. Spalding..... 146,407
Alarm, electric ship, J. B. Andrews..... 146,421
Auger, Ladd and Grover..... 146,344
Axle box, vehicle, E. L. Kinsley..... 146,394
Bag fastener, S. Wellington..... 146,417
Baton, policemen's, Clark et al..... 146,431
Beam and rafter, H. C. Luedeke..... 146,350
Bed bottom, spring, A. W. Hight..... 146,453
Bed bottom, spring, S. H. Reeves..... 146,360
Billiard chalk holder, J. Plunkett..... 146,356
Blind, inside, J. H. Voorhees..... 146,414
Boller, steam, R. J. Gould..... 146,391
Bolt heading machine, J. R. Abbe..... 146,374
Bottle washing machine, C. W. Farclot..... 146,327
Bracket, shade roller, A. S. Dickinson..... 146,385
Bridge, R. Long..... 146,397
Bridge baluster, iron, Sellers et al. (r)..... 5,780
Bridge truss, B. F. Graham..... 146,332
Bridge, truss, Patterson et al..... 146,400
Bridge, connection, A. Bonzano..... 146,425
Bucket, windlass elevator, J. P. Christensen..... 146,315
Bucket, hoisting, T. Eaton..... 146,325
Buckle, harness, G. Rieger..... 143,361
Buckle, harness, A. Walker..... 146,405
Buggy top, flat iron, English et al..... 146,440
Burial casket, I. Charles..... 146,381
Can opener, Fallard et al..... 146,355
Car axle, W. H. Wright..... 146,373
Car axle box, W. A. Dripps..... 146,387
Car brake, T. Campbell..... 146,430
Car coupling, D. A. Balfour..... 146,375
Car coupling, T. R. Jackson..... 146,342
Car coupling, Morgan et al..... 146,398
Car coupling, J. Robertson, Jr..... 146,402
Car coupling, S. S. Sartwell..... 146,363
Car coupling, G. D. Spielman..... 146,408
Car, stock, J. B. Calkins..... 146,378
Carbureter, I. L. Carr..... 146,313
Carbureter, H. Jungling..... 146,468
Carbureter, C. L. Vasquez..... 146,493
Carriage, child's, J. L. Brown..... 146,311
Chair, folding opera, T. J. Close..... 146,432
Chandelier, L. Hull..... 146,455
Check, composition, W. Sanderson..... 146,408

