

(37) R. C. S. says: 1. A spring is situate on a hill several hundred feet high, and nearly a mile from where we wish to use the water.

(38) S. T. asks: What ingredients can be mixed with aniline red to turn it black without injuring its quality?

(39) M. M. F. asks: Please give me a recipe for annealing steel very soft?

(40) H. C. D. asks: 1. How is a fine varnish finish put on wood, to be perfectly smooth and glossy?

(41) W. D. M. says: When do fishes sleep? In my aquarium my gold fish and minnows seem always on the alert.

(42) J. L., of Manchester, England, asks: How are the castings of zinc figures or statues made in France and Germany?

(43) S. asks: 1. What is the greatest perpendicular height to which water can be lifted by a steam pump?

(44) A. E. B. says: 1. I wish to construct a footpower jig saw. The saw blade is to be stretched in a frame after the fashion of the gate saw.

(45) W. H. D. asks: 1. How can I construct a hand pump for the purpose of pumping oxygen gas from a bag into a cylinder, to compress it for a calcium light?

(46) E. P. B. asks: 1. Will the salt in oil made from butter be injurious to machinery or leather?

(47) J. McT. asks: What is the substance called breeze, mentioned in a recipe for making concrete?

Which is the best to apply to wood, crude petroleum

or coal tar? A. Coal tar is best for coating wood underground or where subject to dampness.

(48) R. C. G. says: Our western coal has a great deal of sulphur in it, which makes it very troublesome to work; and as I am a blacksmith, it gives me much trouble.

(49) F. S. asks: Is there anything which will take smoke stains from white marble?

(50) W. B. asks: How can I color brick-work black? A. Use a paint or varnish made from Brunswick black, oil, and turpentine.

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

B. B. T.—The material contains nickel, cobalt, arsenic, and sulphides of these metals. After solution, the arsenic may be separated by sesquioxide of iron.

COMMUNICATIONS RECEIVED.

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

HINTS TO CORRESPONDENTS.

Correspondents whose inquiries fail to appear should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them.

Inquiries relating to patents, or to the patentability of inventions, assignments, etc., will not be published here.

Hundreds of inquiries analogous to the following are sent: "Who sells small distilling apparatus? Where can agricultural steam engines be bought?"

OFFICIAL.

INDEX OF INVENTIONS

FOR WHICH

Letters Patent of the United States Were Granted in the Week Ending

March 6, 1877,

AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

A complete copy of any patent in the annexed list, including both the specifications and drawings, will be furnished from this office for one dollar.

Table listing inventions such as Air gun, spring, H. M. Quackenbush, Air, heating, D. McAllister, Air, moistening, C. R. Merrill, Animal substances, etc., preserving, F. S. Barré, etc.

Main table listing inventions such as Barrel carrier, N. Oak, Barrels, constructing, E. J. Granger, Bath for tempering steel, A. Kalstrom, Bed bottom, spring, J. O. Burch, etc.

DESIGNS PATENTED.

Table listing patented designs such as 9,770.—MATCH HOLDER AND MAT.—P. L. Davis, San Francisco, Cal., 9,771.—CARPETING.—E. Fisher, New York city, etc.