

(27) J. R. Y., Jr., asks: Please give me a recipe for a wash that will remove or hide marks and stains on hard finished house walls.

(28) C. D. R. asks: Please give me recipes for making turpentine japan or paint dryer, benzine japan or paint dryer, and rubbing varnish for cabinet makers' use?

(29) J. H. R. asks: What is the advantage of placing the high pressure cylinder of a marine compound engine directly above the low pressure cylinder?

(30) W. K. D. says: I have an acquaintance who has an open fireplace in his office, and claims that during the forenoon the sun comes into the room and deadens the fire.

(31) J. A. C. says: I have a boiler made of first class iron, which commenced leaking in one of the joints. This continued until every joint was leaking.

(32) W. E. W. asks: 1. How can I tell the weight of a flywheel where I know the diameter, width of face, and thickness of same?

(33) J. E. C. says: I see it stated in an article on machine belts, in the SCIENCE RECORD for 1876, p. 331, that a belt wrapped one quarter round a pulley has only one fourth the power of what it would have if wrapped one half round.

(34) M. A. W. asks: 1. Will a steam boiler 4 feet long by 24 inches diameter, with a firebox 40 inches high, 16 inches wide, and 20 inches long, with 36 one inch flues, be large enough to run an engine with a cylinder, 3 x 6 inches, with 80 lbs. boiler pressure at 200 revolutions per minute?

(35) C. A. C. asks: 1. How can I varnish a colored mechanical drawing, so that the paper and drawing will not be marred by the operation?

(36) L. M. C. says: I am nineteen years of age, and my ambition is to learn to be a competent practical locomotive engineer.

1. Will high pressure steam produce a higher note on a steam whistle than low pressure steam on the same whistle? A. Generally, yes. 2. Will compressed air produce the same note on a steam whistle as steam does, the pressure being alike in both cases?

(37) J. O. says, in reply to D. W.'s query as to the sudden welding of a mill spindle and its step piece: I have had a similar experience in the uniting of hardened steel under excessive friction, due to the absence of lubricant.

(38) J. H. P. says, as to the welding of the spindle to the step plate: I think that the end of the spindle had worn a little hollow in the step plate, having the same curvature with itself.

(39) F. D. H. says: The statement of D. W. as to the welding of a mill spindle point to its step can be verified by three precisely similar cases, which have been brought to us for repairs.

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

J. A. S.—It is iron pyrites or sulphide of iron. See p. 7, vol. 36.—W. R. S.—A quantitative analysis of fire clay, etc., would cost about \$15.

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 Valuation of Sugar. By S. W.

Also inquiries and answers from the following: F. B. M.—G. S. B.—P. P. P.—L. S. B.—A. K. B.—C. P. R.—J. B. O.

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.

Hundreds of inquiries analogous to the following are sent: "Who makes dynamometers? Where can silkworms' eggs be obtained? Who makes brewers' machinery? Who sells tobacco-flavoring composition? Who sells coffee-roasting machinery?"

Official. INDEX OF INVENTIONS FOR WHICH Letters Patent of the United States were Granted in the Week Ending April 3, 1877, AND EACH BEARING THAT DATE.

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. In ordering, please state the number and date of the patent desired, and remit to Munn & Co., 37 Park Row, New York city.

Table listing patents granted in the week ending April 3, 1877, with categories like Agitating and mixing, Agricultural boiler, Air guns, etc.

Table listing patents granted in the week ending April 3, 1877, with categories like Boot shank support, Boots and shoes, Breech-loading firearm, etc.

Table listing patents granted in the week ending April 3, 1877, with categories like Last, C. E. Cree, Lathe chuck, F. Armstrong, etc.

DESIGNS PATENTED.

Table listing designs patented, including 9,873.—CORSET.—M. Adler, New Haven, Conn.