

reaction with a few drops of nitric and sulphuric acids, bichromate of potassa, and caustic soda respectively, with a standard sample of the pure oil.

(17) C. & Co. ask: What chemicals are used in the dyeing of Pampas grass, red, blue, yellow, etc.? A. Use warm aqueous and alcoholic solutions of any of the soluble aniline dyes.

(18) R. M. asks: What book would you advise for new beginners in electroplating, brass, copper, tin, silver plating, nickel, etc.? A. Consult Fesquet's "Electro-Metallurgy;" Napier's "Electro-Metallurgy;" Roseleur's "Galvanoplastic Manipulations."

(19) Z. C. writes: In No. 21 of the current volume of the SCIENTIFIC AMERICAN, you give a receipt for making a "copying pad" as follows: 1 oz. Cooper's gelatine to 6 1/4 fluid oz. glycerine. I undertook to make a pad, following the receipt to the letter, and found that the pad would not abstract any ink (aniline according to the receipt) from a piece of paper. I then heated the mixture again and added another ounce gelatine. This time the pad would give four good copies, and only six which were at all legible. Then I added 1/2 oz. more gelatine, and can now take 15 good copies. A. You will have better results if you use more glycerine, as directed, and expel all or as much of the water as possible by heating over a salt water bath for some time. Pads made according to the receipt have yielded upwards of a hundred and fifty distinct copies.

(20) J. K. asks for some good stove polish that can be prepared at home—something that will not burn off. A. Common stove blacking is graphite or plumbago reduced to a fine powder by grinding. We know of nothing better. 2. What will remove stains from stove zinc, and restore its look of newness? A. The planished surface is imparted by rolling the warm sheet metal; the finish cannot readily be restored. The surface may be cleaned and brightened by moistening it with a strong solution of oxalic acid in water, and drying with sawdust, or better, with whiting.

(21) H. B. asks (1) for a receipt for making self-raising flour. A. The following are the compositions of several of these powders in extensive use: 1. Bicarbonate soda, 23 oz.; burnt alum, 19 oz.; starch, 57 oz. 2. Bicarbonate soda, 2 1/4 oz.; sesquicarb. ammonia, 2 1/4 oz.; starch, 47 oz.; burnt alum, 26 1/2 oz. 3. Bicarbonate soda, 31 oz.; burnt alum, 29 1/4 oz.; starch, 39 oz. 2. For cementing leather on friction pulleys? A. Good glue is commonly employed, we believe.

(22) G. O. asks how to clear a warehouse of weevil. They live on the grain in the cracks of the floor when the house is empty. A. Dalmatian (Persian) insect powder, when well distributed, does very well.

(23) B. F. M. asks: What chemicals are used for taking the solar spectrum in colors? Can you tell me a compound that will turn yellow in daylight, also one that will turn red? A. Photographing in the natural colors has never been accomplished by direct means, although monochromatic prints in several colors have been obtained. The results in color photography by indirect means, attained by Vogel, Vidal, Alfred, and others have been noticed in the back numbers of the SCIENTIFIC AMERICAN. Consult some late work on photography and photographic chemistry. See pp. 132 and 133, Vol. 35, SCIENTIFIC AMERICAN.

(24) J. W. asks how phosphor bronze is formed, and how the phosphorus is added to the metal, and how many ounces is given to a pound of metal. A. Wrap the phosphorus—about 1-10th of one per cent—in foil, and force it by means of an earthen rod having a bell-shaped cavity at the end, beneath the surface of the molten metal (bronze). The phosphorus must be free from moisture, and great care must be observed in handling it to avoid accident.

(25) R. H. B. writes: A correspondent of the Derrick states that gold was extracted from petroleum oil in New York city. Does petroleum contain gold; if so, in what quantity? A. According to Mr. John Turnbridge, of Newark, New Jersey, small quantities of gold have been found in petroleum residues. See article "Petroleum and Gold," p. 377, No. 24, Vol. 39, SCIENTIFIC AMERICAN.

(26) C. C. asks (1) for the name of the acid for testing gold and silver. A. The acid used with the touchstone is pure nitric acid slightly diluted. 2. What is the best material for polishing steel and brass? A. Emery flour and oil are in general use.

COMMUNICATIONS RECEIVED.

- On Collisions at Sea. By W. L. Fish Story. By C. F. L. On War Vessels. By J. L. R. On Panama Ship Railway. By W. E. A. On Ice Boats. By L. On Ice Boats. By A. F. B.

[OFFICIAL.]

INDEX OF INVENTIONS

FOR WHICH

Letters Patent of the United States were

Granted in the Week Ending

December 2, 1879,

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, or any patent issued since 1867, 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.

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