Fertilizers, apparatus for reducing material to a

(26) T. J. J. asks: How can I preserve a about ten gallons of parsnip wine, the product of parboiler when not at work, for instance, one used in the harvest field for thrashing? It is only used a few months in the summer, and perhaps once every month or two during the winter, and the balance of the time it is corroding and wasting away. It is my judgment that a boiler used so will not last as long as if used all the time. Is it so; and if so, how can I treat it? A. To lay up a portable boiler out of use, blow out or otherwise empty the water from the boiler thoroughly while the iron is warm, so it will dry off inside. Take off a hand hole plate, and (if no man-hole plate) take out the safety valve so as to permit a circulation of air through the in terior. Take out the grate bars, and thoroughly clean off the ashes and soot from all parts of the furnace walls and the interior of the tubes. Store the boiler in a dry shed or barn, with the chimney stack standing, or in a dryplace with an umbrella hood over the top of the stack, so that dry air will draw through the furnace and tubes.

(27) S. P. W. writes: I am in need of in formation. I wish to find out how to color wood black entirely through—for instance, knife handles. I have tried and failed. I wish to make maple black enough for knife handles, and have the color so that they can befinished to look something like ebony. They are all cut into about the sizes that are required. A. Steep in a strong boiling aqueous solution of logwood extract for several hours, and then for twenty-four hours more in a strong hot solution of sulphate of iron.

(28) J. F. writes: Please advise us if you can name some process whereby we could make our own carbon paper. We use large quantities, and it comes very expensive buying it from stationers. A. Clear lard, 5 ounces; beeswax, 1 ounce; Canada polish for polishing brass and steel. A. You will find balsam, one-tenth ounce; lampblack, q. s. Melt by aid of heat, and mix. Apply with a fiannel dauber, removing as much as possible with clean woolen rags.

(29) L. N. writes: I have a telephone from my house to that of a friend. The diaphragm is made examined, with the results stated: of tough animal tissue, or drumhead. I formerly used a string for the line, but it was constantly getting out of repair, on account of the different conditions of the atmosphere. I tried wire, but it rings so I cannot understand. I stuffed it behind the diaphragm, and inserted a soft substance between the diaphragm and the tin fastening of the wire, and yet it does not work perfectly. I think the diaphragm is too sensitive. What must I do for it? A. Try small wire cable cord.

(30) G. H. writes: I wish to patch a blacksmith's bellows. What is the best cement for gluing Paris Electrical Exhibition; with papers on the economy such work? A. Use rubber cement. See receipts in SUPPLEMENT, No. 158.

(31) S. A. H. asks: 1. What is the shade A New Method of Signaling on Railof green on inclosed sample, and how can I obtain a shellac lacquer for tin? A. The colorant of the lacquer appears to be Frankfurt or Scheele's green an aceto-arsenite of copper. When in a fine state of division it mixes readily with shellac lacquer. It can be the improvements since made. replaced to advantage by some of coal tar greens, soluble in alcoholic liquids. 2, Can gold be deposited in various colors, say green, red, purple, etc., by galvanism? And if so, can the same be done with other metals and their alloys, such as brass, etc.? Please refer me to some work giving practical instruction for obtaining the various colors in this way. A. Yes. See "Electrometallurgy," in SUPPLEMENT, No. 310. Few of the brighter colors can be obtained with the baser alloys. 3. What is the best lacquer, and how applied, to give articles of brass, such as Hubbard's Newspaper and Bank Direction mountings for optical instruments, etc., the appearance of gold? A. The lacquer to be used depends somewhat upon the color of the brass: for a light brass a dark lacquer is required, and vice versa. The follow ing are good receipts for some of these lacquers: 1. Seedlac. dragon's blood, annatto, and gamboge, each 4 ounces; saffron, 1 ounce; wine spirit, 10 pints. 2. Turmeric, 1 pound; annatto, 2 ounces; shellac and gum juniper, each 12 ounces: wine spirit, 12 ounces. 3. Gamboge, 1/2 ounce; aloes, 1/2 ounce; shellac, 8 ounces; vol. xliv. See that the finished articles are clear, heat them as hot as the hand will bear, and distribute the over the surface. When the articles are small they require to be heated in an oven to harden the lacquer. 4. How is the lacquer made and applied on the gilt moulding known as lacquer moulding, the leaf used in THE APPLEDORE COOK BOOK. New Edition. making it being tin foil? A. The lacquer ordinarily employed is composed of an alcoholic shellac solution colored with turmeric and annatto. 5. Is sheet zinc as pure as the commercial (cast) zinc found in the market in the shape of slabs and pigs; or is the sheet alloyed with lead or other metal; and if so, in what proportion? A. No; it usually contains small quantities of antimony and lead. 6. When impure zinc is used for a gravity battery, may the difficulty be overcome same as in the Grove battery, by keeping the zincs amalgamated, or will the mercury be likely to drop from the zinc on to the copper and interfere with the action? A. Amalgamation of the zinc is useless in the sulphate of copper gravity form of battery.

(32) G. C. W. writes: In your last issue you gave recipes to oxidize gold, silver, and brass. Will the same method do for iron? If not, what will; or can iron not be oxidized at all (malleable iron)? A. Iron is much more easily oxidized than the nobler metals. Plunge the clean metal for a few moments into a strong aqueous solution of ferric chloride, then rinse in water. The color may be somewhat improved by heating it in tive views of a number of artistic villas, cottages, city

(33) W. K. asks: How can I dissolve tions. bronze powder so that I can put it on papier mache, The Structure of the Cotton Fiber in with a brush like varnish or paint, and after, when it is dry, can it be burnished with an agate stone, so that it looks like a gilt moulding? A. Mix the powder with thin glue size as a vehicle, this will form a good burnishing varnish. These powders cannot be dissolved and retain their properties.

snips, sugar and dough of yeast cakes, spread on toast usually after having gone through fermentation this wine gets perfectly clear, but this time it got cloudy, and so far we have not been able to clear it although we have tried charcoal, raisins, and bicarbonate of soda. Can you recommend a remedy? A. Try the addition of a small quantity of egg albumen-white of egg-allowing the liquid to remain quiescent forforty-eight hours. Then rack off from the sediment and cap.

(35) M. A. asks: Can you tell me how to color feathers? Is aniline used? A. Use any of the soluble aniline or coal tar dyes of suitable color, usually a quarter of an ounce to the gallon of liquid (water, or water and alcohol) is sufficient. Steam the feathers or put them through boiling water before immersing in the dye beck. Usually no mordant or developer is required except for the reds or pinks. For these chloride of tin and tartaric acid may be employed as brighteners, alone or in connection with soap

(36) T. N. writes: I have been using a 4 gallon gold solution about eighteen months. For the last two months the anodes coat over with gold. I am using one electrotype copper anode and one gold, and I do not understand why they coat over. I am using a wooden vessel, coated inside and outside with asphalt. The work plates all right. A. Your solution is probably deficient in cyanide. See "Gold Deposits," in SUP-PLEMENT, No. 310.

(37) J. S. J. asks: Please give me information how to construct a small nickel plater, for plating small articles, the plates to cost as little as possible; also, information to remove rust from brass, and a practical receipts and directions on these subjects in SUPPLEMENT, No. 310.

MINERALS, ETC.—Specimens have been received from the following correspondents, and

Wm. F.-It is genuine nutmeg, of poor quality.-J. B.-It is pyrogallic acid.

NEW BOOKS AND PUBLICATIONS.

INCANDESCENT ELECTRIC LIGHTS. New York: D. Van Nostrand. 50 cents.

No. 57 of Van Nostrand's Science Series: contains Du Moncel's and Preece's account of the incandescent electric lights (particularly Edison's) exhibited at the of this mode of lighting, by John W. Howell, and on he steadiness of the electric current, by C. W. Siemens.

By Sir David Solomons. Tun-WAYS. bridge Wells, Eng.: A. Baldwin.

Describes with some minuteness the electrical signals for railways patented by the author in 1874, with

ONE OF CLEOPATRA'S NIGHTS, AND OTHER FANTASTIC ROMANCES. By Theophile Gautier. Faithfully translated by Lafcadio Hearn. New York: R. Worthington.

The translator has done his work rather better than such work is usually done. And the same may be said of the publisher. Admirers of Cautier will be pleased to see his artisticand fantastic, not to say erotic, stories in so fine an English dress.

TORY OF THE WORLD. 2 vols. 8vo, pp. 1228 and 2591. New Haven: H. P. Hubbard. \$10. 1882.

These volumes give a vast amount of information with regard to the world's thirty-five thousand periodical publications, and the people who make and read them, together with a directory to some 20,000 American and foreign banking houses, a large number of maps, advertisements, and much statistical matter. Aside wine spirit, 1 gallon. For other formula, see page 209, from its value to advertisers and in spite of the temporary business utility of much of the information given the work has, as a whole, a permanent value in that it lacquer quickly with brush or rag at one operation gives for the first time an elaborate census of the world's periodical literature, and thus exhibits a fairly accurate picture of one phase of human progress. The Several coatings of a thin lacquer give the best results. index of names fills some two hundred closely printed columns.

> Boston: Andrew F. Graves. \$1.25.

Miss Parloa is well known in this city and elsewhere as a skillful cook and successful teacher of the art of cooking. Both qualifications are shown in the "Appledore." The numerous recipes are plainly and tersely put; and the author claims to have tested and approved

REPORT TO THE STATE BOARD OF HEALTH ON METHODS OF SEWERAGE FOR CITIES AND VILLAGES IN THE STATE OF NEW YORK. By James T. Gardner. Albany: Weed, Parsons & Co. Paper, pp. 15.

Recommends the separate system of sewers for large towns with proper water supplies, and dry removal for villages, hamlets, and isolated dwellings.

ARTISTIC HOMES IN CITY AND COUNTRY. By Albert W. Fuller. Boston: James R. Osgood & Co. A selection of sketches, showing plans and perspec-

homes, a church, with some interior views and explana-

ITS RELATION TO TECHNICAL APPLICATIONS. By F. H. Bowman. Second Edition. New York: John Wiley & Sons.

The first edition of this uncommonly worthy treatise was reviewed at considerable length in this paper a (34) A. O. writes: This is a world of few months ago. The author makes the gratifying antroubles, and I suppose you are entitled to your share. nouncement in the preface to this edition that he will Here is one of my wife's making. She made, last spring, soon have ready a corresponding treatise on wool.

[OFFICIAL.]

INDEX OF INVENTIONS FOR WHICH

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	Carrier. See Trace carrier. Chain machine, W. A. Reid. Chair. See Rocking chair. Chuck. lathe, S. J. Kirk. Churn dasher, T. A. Miller. Churn motor, Schott & Leepy. Cigar lighter, A. C. Moss. Clock cases, manufacturing celluloid, R. T. Triplett Clothes sprinkler, E. J. B. Whitaker. Coffin, C. H. Olson. Collar, horse, J. Straus. Coloring matter, manufacture of blue, J. H. Stebbins, Jr. Contourgauge and tool, H. C. Barker. Cooker, steam, A. M. Amos. Corn sheller, M. S. Cook. Cotton, implement for siding and thinning, Dickert & Heller. Cotton staik and weed cutter, J. H. Vannoy. Cotton whipper, R. H. Goldsmith. Coupling. See Hose coupling. Shaft coupling. Pipe coupling. Cow tail holder, Andrus & Prior. Cuff, I. P. Turner. Cuttivator, W. B. Cullum. Curtain cord tightener, F. J. Werneth. Cut-off valve, B. Brazelle. Cutter. See Bog cutter. Cotton stalk and weed cutter.	255,402 255,173 255,219 255,225 255,320 255,355 255,350 255,350 255,350 255,25 255,227 255,279 255,233 255,214 255,361 255,361 255,361 255,361	Lair Lair Loo Loo Lui Ma Ma Me Mill Mo Mo Oal Oil Oil Oro Ov Pa Pa Pa
	Carrier. See Trace carrier. Chain machine, W. A. Reid. Chair. See Rocking chair. Chuck. lathe, S. J. Kirk. Churn dasher, T. A. Miller. Churn motor, Schott & Leepy. Cigar lighter, A. C. Moss. Clock cases, manufacturing celluloid, R. T. Triplett. Clothes sprinkler, E. J. B. Whitaker Coffin, C. H. Olson. Collar, horse, J. Straus. Coloring matter, manufacture of blue, J. H. Stebbins, Jr. Contourgauge and tool, H. C. Barker. Cooker, steam, A. M. Amos. Corn sheller, M. S. Cook. Cotton, implement for siding and thinning, Dickert & Heller. Cotton stalk and weed cutter, J. H. Vannoy. Cotton whipper, R. H. Goldsmith. Coupling. See Hose coupling. Shaft coupling. Pipe coupling. Cow tail holder, Andrus & Prior. Cuff, I. P. Turner. Cutivator, W. B. Cullum. Curtain cord tightener, F. J. Werneth. Cut-off valve, B. Brazelle. Cutter. See Bog cutter. Cotton stalk and weed cutter. Cutting machine, A. Warth.	255,402 255,173 255,219 255,220 255,355 255,350 255,350 255,350 255,130 255,130 255,232 255,207 255,279 255,279 255,233 255,214 255,266 255,368 255,136	Lan
	Carrier, See Trace carrier. Chain machine, W. A. Reid. Chair. See Rocking chair. Chuck. lathe, S. J. Kirk. Churn dasher, T. A. Miller. Churn motor, Schott & Leepy. Cigar lighter, A. C. Moss. Clock cases, manufacturing celluloid, R. T. Triplett. Clothes sprinkler, E. J. B. Whitaker. Coffin, C. H. Olson. Collar, horse, J. Straus. Coloring matter, manufacture of blue, J. H. Stebbins, Jr. Contourgauge and tool, H. C. Barker. Cooker, steam, A. M. Amos Corn sheller, M. S. Cook Cotton, implement for siding and thinning, Dickert & Heller Cotton stalk and weed cutter, J. H. Vannoy. Cotton whipper, R. H. Goldsmith Coupling. See Hose coupling. Shaft coupling. Pipe coupling. Cow tail holder, Andrus & Prior. Cuff, I. P. Turner. Cutf, I. P. Turner Cutting machine, A. Warth Cutting mechanism, S. Danheim.	255,402 255,173 255,319 255,320 255,368 255,368 255,112 255,206 255,230 255,230 255,230 255,230 255,230 255,230 255,230 255,230 255,230 255,230 255,231	Lair Lair Loo Loo Lui Ma Ma Me Mill Mo Mo Oal Oil Oil Oro Ov Pa Pa Pa
	Carrier. See Trace carrier. Chain machine, W. A. Reid. Chair. See Rocking chair. Chuck. lathe, S. J. Kirk. Churn dasher, T. A. Miller. Churn motor, Schott & Leepy. Cigar lighter, A. C. Moss. Clock cases, manufacturing celluloid, R. T. Triplett. Clothes sprinkler, E. J. B. Whitaker Coffin, C. H. Olson. Collar, horse, J. Straus. Coloring matter, manufacture of blue, J. H. Stebbins, Jr. Contourgauge and tool, H. C. Barker. Cooker, steam, A. M. Amos. Corn sheller, M. S. Cook. Cotton, implement for siding and thinning, Dickert & Heller. Cotton stalk and weed cutter, J. H. Vannoy. Cotton whipper, R. H. Goldsmith. Coupling. See Hose coupling. Shaft coupling. Pipe coupling. Cow tail holder, Andrus & Prior. Cuff, I. P. Turner. Cutivator, W. B. Cullum. Curtain cord tightener, F. J. Werneth. Cut-off valve, B. Brazelle. Cutter. See Bog cutter. Cotton stalk and weed cutter. Cutting machine, A. Warth.	255,402 255,173 255,319 255,320 255,355 255,368 255,112 255,266 255,330 255,330 255,230 255,230 255,230 255,230 255,217 255,279 255,214 255,281 255,361 255,361 255,361 255,361 255,361 255,361 255,361 255,361 255,361	Lan Light Look Look Ma Ma Me Mil Mil Mil Oil Oil Oil Oil Pa Pa Pa Pa Pa Pa
	Carrier. See Trace carrier. Chain machine, W. A. Reid. Chair. See Rocking chair. Chuck. lathe, S. J. Kirk. Churn dasher, T. A. Miller. Churn motor, Schott & Leepy. Cigar lighter, A. C. Moss. Clock cases, manufacturing celluloid, R. T. Triplett Clothes sprinkler, E. J. B. Whitaker Coffin, C. H. Olson. Collar, horse, J. Straus. Coloring matter, manufacture of blue, J. H. Stebbins, Jr Contourgauge and tool, H. C. Barker. Cooker, steam, A. M. Amos Corn sheller, M. S. Cook Cotton, implement for siding and thinning, Dickert & Heller Cotton staik and weed cutter, J. H. Vannoy. Cotton whipper, R. H. Goldsmith. Coupling. See Hose coupling. Shaft coupling. Pipe coupling. Cow tail holder, Andrus & Prior. Cuff, I. P. Turner. Cuttivator, W. B. Cullum. Curtain cord tightener, F. J. Werneth. Cut-off valve, B. Brazelle. Cutter. See Bog cutter. Cotton stalk and weed cutter. Cutting machine, A. Warth Cutting machine, A. Warth Cutting mechanism, S. Danheim. Dental flask, T. W. Browne Desulphurizing furnace, A. Blatchly. Diaper, H. Morgan.	255,402 255,173 255,219 255,225 255,386 255,112 255,266 255,350 255,130 255,232 255,100 255,279 255,279 255,281 255,214 255,261 255,261 255,361 255,361 255,361 255,361 255,368 255,368 255,168 255,368 255,368 255,368 255,368 255,102 255,368	Land Land Land Land Land Land Land Land
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2	heimer	. 999
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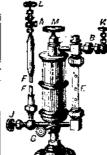
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