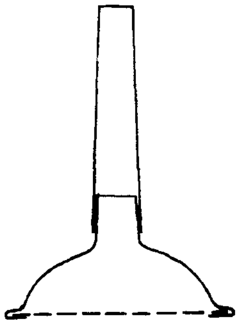
The figure represents, in section, this filtering bulb which has given entire satisfaction. It is formed in three portions, the upper one being a straight tube which is placed in communication with a filter pump or its equivalent. This tube may be made entirely of platinum, or of platinum foil turned to form a tube, the edges of the foil being soldered with gold.



The portion immediately below this tube has the shape shown in section. No metal spinner of ordinary skill could have any difficulty in turning it on a lathe. The platinum plate should have a thickness of not less than half a millimeter or $\frac{1}{50}$ of an inch. A flat shoulder is turned on the lower part of the bulb. Against this is placed the third portion, a perforated plate, and then the outer rim is turned over the plate so as to leave a circular margin of about 2 or 3 millimeters wide. The platinum bulb has a short tube, spun on the lathe, which is made conical so as to fit tightly into the tube which connects it with the aspirator. The bulb and tube may be soldered together with gold, if it is thought preferable, instead of being connected by the conical tube of the bulb fitting tightly into the longer tube.

The platinum filtering bulb, which I am now using, was made by Messrs. Eimer & Amend, Third avenue and 18th street, New York.

ABSTRACTS.

GENERAL AND INORGANIC CHEMISTRY.

Fixations of Free Atmospheric Nitrogen by Argillaceous Soils. BERTHELOT.

The author discusses the questions of nitrification by atmospheric nitrogen, and the formation of nitric acid and of ammonium nitrate by the electric spark. He believes, with Boussingault, that plants cannot assimilate atmospheric nitrogen directly. Ten years ago the author established the theory of a new cause of fixation of nitrogen; atmospheric electricity acting, not by strong discharges and forming nitrates and nitrites, but slowly, forming complex nitrogenous compounds in a continuous way by the feeble electric tension always and everywhere existing on the surface of earth.

These researches have led to the discovery of another cause of fixation of atmospheric nitrogen, namely, the action of the argillaceous soils and the micro-organisms in them. The soils experimented upon, sands and kaolins, slowly fix free atmospheric nitrogen. This action is independent of nitrification, or the condensation of ammonia, and is due to the presence of living organisms. It does not manifest itself in winter, but occurs especially during the season of vegetation. A temperature of 100° annihilates it; it exists as well in inclosed spaces as in the open air, and in darkness as well as in light, although less active in the former case. Analytical results were obtained during one season from four kinds of soils: sand, yellow sand, kaolin, and argillaceous kaolin. These experiments show how argillaceous sands, at first almost sterile, can increase in fertility year by year through the nitrogen thus fixed, and through that of previous vegetation. (*Bul. Soc. Chim.*, **45**, *121.*) M. L.

Electrolysis of few Chemical Compounds. D. Tommasi.

Potassium Chlorate. A very dilute solution of potassium chlorate, very slightly acidulated with sulphuric acid, is decomposed by 8 Bunsen elements; the cathode was platinum, the anode pure distilled zinc. After two hours chlorine could be detected with the silver nitrate. The electrolysis gave

$$KClO_3 + 3Zn + 3H_2SO_4 = KCl + 3ZnSO_4 + 3H_2O.$$

If the zinc anode is replaced by platinum, no chlorine can be detected, even after 5 hours. It is only after great dilution of the chlorate that an alkaline reaction can be found in the limb of the V tube containing the cathode.

Potassium Perchlorate. Even 12 Bunsen elements fail to decompose this salt with an anode of zinc foil, and in presence of free H_2SO_4. In absence of acid, gas appeared at the end of the electrode; perchloric acid appears at the anode, and potassium oxide at the cathode.

Chloral Hydrate. A porous dish contains a solution of this salt; an outside dish contains dilute H_2SO_4; the anode dips into the acid. The chloral solution showed presence of aldelyde after electrolysis. (*Bul. Soc. Chim.*, **45**, *144.*) M. L.

Contributions to a Knowledge of Sulphur and Mercury.

BERTHELOT.

In the drying rooms of powder mills, where gun powder is dried at a temperature between 60° and 65° C, the warm powder has an odor very like SO_2. A sublimate collected on panes of glass placed above the desiccating tables was found to contain

Sulphur	97.84
Potassium nitrate	0.90
Traces of carbon and other bodies undetermined	1.26

It is, in fact, pure sulphur. The tension of sulphur vapor is not measurable; it must be *nil* at the ordinary temperature. Sublimated sulphur was never found above the samples in collections. Similar facts exist for mercury, the tension of which at 20° is 0° .0268m. The author describes a room where there is a large mercury bath. In a closet at a height of 6 feet. and 8 feet distant from the mercury, a glass stoppered flask containing iodine showed, after four years, a deposit of mercury iodide around the junction of the stopper and the flask. (*Bul. Soc. Chim.*, **45**, *114.*) M. L.

Combination of Auric Chloride with Sulphur Tetrachloride and Selenium Tetrachloride.

L. LINDET.

Sesquichloride of gold and sulphur, $Au_2Cl_3S_2Cl_4$—Forms fine golden needles, often grouped together. It is obtained by the action of dry chlorine on sulphur protochloride in presence of gold.

The analysis of this compound is made by treating it in a slightly alkaline solution with potassium permanganate in excess; the excess is afterwards destroyed by alcohol. The precipitate contains all of the gold; the clear solution contains the chlorine and the sulphur as sulphuric acid. The analysis gave

	Found.	Calculated.
Gold	41.1	41.27
Chlorine	51.6	52.04
Sulphur	7.1	6.70

The compound is easily dissociated, losing chlorine in dry air, or in vacuo, and being decomposed by water.

Perchloride of gold and selenium. $Au_2Cl_3Se_2Cl_4$.—The tetrachloride of selenium being solid and infusible is dissolved in arsenious chloride and put then in contact with the gold at 130° in presence of dry chlorine. The salt occurs in fine tables of a reddish orange color. Water decomposes it into gold chloride, HCl and selenious acid. (*Bul. Soc. Chim.*, **45**, *146.*) M. L.

Researches on Vegetation.—On Carbonates in Living Plants. BERTHELOT and ANDRÉ.

The authors have been led to the investigation of the simplest organic salts existing among the immediate principles of plants, the carbonates. Free carbonic acid is eliminated by keeping in vacuo and afterwards boiling. These operations must be performed immediately, to avoid fermentation. HCl is added, the temperature being kept near ebullition, and a stream of purified air is made to pass into the liquid. The carbonic acid is collected in an absorption apparatus. In a plant weighing 16.9252 grms. they found 0.40 grms. of CO_2, after ebullition 0.175 grms.; the roots, leaves and flowers contained chiefly free CO_2, whereas in the stem the free CO_2 before ebullition was about double the combined acid. If the plant is kept under water a few days the amount of CO_2 increases rapidly, as in the doubling of ethylcarbonic and orsellic acids. Some considerations on problems of vegetable physiology follow the analytical results. (*Bul. Soc. Chim.*, **45**, *116.*) M. L.

Continuous Preparation of Oxygen. A. BIDET.

The author indicates the employment of the reaction of chloride of lime on the oxide of cobalt, a reaction given by Rosenstiehl for preparation of oxygen. The device cannot be explained without the diagram. (*Bul. Soc. Chim.*, **45**, *81.*) M. L.

ORGANIC CHEMISTRY.

On Isomerism in the Aromatic Series.—Heat of Neutralization of Oxybenzoic Acids. BERTHELOT AND WERNER.

The study of the isomeric polyatomic phenols led the authors to determine the constitutional difference by measuring the heat of neutralization. The bodies of the orthobenzene series are very clearly distinguishable from the derivatives of the meta and parabenzene series. These two latter classes exhibit towards alkalies two phenolic functions, whereas the orthobenzene derivatives manifest only one. Similar results are given by the three isomeric oxybenzoic acids ; for the three the heat yielded with the first equivalent of alkali is about the same ; the heat of solution also is almost equal. The difference is apparent, however, in the addition of a second equivalent of alkali ; here the heat for the para and metaoxybenzoic acids amounts about to the same figure, whereas, it is almost nothing for salicylic or orthobenzoïc acid. The similarity of these results to those obtained with the three oxyphenols (considered as generators of the oxybenzoic acids) shows the thermochemical diversity of the aromatic isomers. (*Bul. Soc. Chim.*, **45**, *63*.) M. L.

On the Oxybenzoic Acids and the Heat of Formation and Transformation. M. M. Berthelot and Werner.

The authors have studied the action of bromine on the three isomeric oxybenzoic acids ; this action gives the same final products for two of the acids : carbonic acid and tribromphenol. The final products thus being the same it is easy to calculate the reciprocal heat of transformation of the two isomers. The heat of formation of tribromphenol, starting from phenol, has been established by former experiments, and thus the heat of formation, starting from their elements, of two of the three oxybenzoic acids is easily calculated. The authors conclude, that the reciprocal transformation of isomers of the same chemical function produces only small thermic effects, and consequently answers to a very small amount of energy when compared to the work developed by proper combinations, polymerisations and by the true changes of function. (*Bul. Soc. Chim.*, **45**, *63*.) M. L.

On the Action of Diazo-Compounds,on β-Naphthylamine. J. A. Lawson.

From experiments made, the author comes to the conclusion that the compounds produced by the action of diazo-salts on β-naphthylamine, are most probably diazoamido-compounds. Their behavior on boiling with acids warrants this supposition. Benzoldiazo-β-naphthylamine, $C_{10}H_7NHN{=}N{-}C_6H_5$ crystallizes from absolute alcohol, in bright red, rhombic scales, and from dilute alcohol in long, light red needles, but is insoluble in water ; melting point 102–104. From this the acetyl and benzoyl-compounds were obtained. On reduction, the above yielded an a-β-naphthylendiamine, from which the chloride, sulphate, acetyl and benzoyl-compounds were produced. (*Ber. d. chem. Gesell., 1885, 796.*)

J. H. S., Jr.

On the Action of Amines on Chinone. Th. Timcke.

From benzochinon the authors succeded in preparing dianilidobenzochinon, and dianilodobenzochinon anilid. The latter is represented by the formula

$$C_6H_2\left\{\begin{array}{l}O\\ N{-}C_6H_5\\ NH{-}C_6H_5\\ NH{-}C_6H_5\end{array}\right.$$

It is prepared by dissolving benzochinon in 20 times its weight of hot glacial acetic acid, and adding to the solution so obtained, for every 1 pt. of benzochinon, 2 pts. of aniline. It is heated on the water bath for a short time, and then filtered rapidily. On cooling, the anilido-compound crystallizes out, and may be purified by recrystallizing from alcohol. Brownish-red needles, melting at 202–203°C. and soluble in strong H_2SO_4, with a blood-red color. From the above were also obtained anilidooxybenzochinonanilide,

$$C_6H_5\left\{\begin{array}{l}O\\ NH{-}C_6H_5\\ NH{-}C_6H_5,\\ OH\end{array}\right. \text{and anilido-oxybenzochinon} \left\{\begin{array}{l}O\\ O\\ NH{-}C_6H_5\\ OH\end{array}\right.$$

(*Ber. d. chem. Gesell., 1885, 758.*)

J. H S., Jr.

On the Nature and Properties of Alkaloids. Oechsner de Coninck.

The author thinks that the definitions generally given of an alkaloid are too vague ; it is said that

"Alkaloids are compounds of nitrogen, capable of uniting with acids, like ammonia, and forming with them definite combinations, which are true salts." The inconvenience of this definition is that it can be applied in general not only to the true alkaloids that constitute a separate group among these compounds of N, but to all basic compounds of N. The amido-compounds combine also with acids, but they have never been considered as alkaloids.

As a means of classification the author advocates the reaction of Anderson (action of warm water on the chloroplatinates and chloraurates of these bases). He proposes to base the definition of an alkaloid upon the resistance of these double salts to oxidizing influences, and to the decomposing action of water. Alkaloids may be divided in three groups, viz.: 1. Alkaloids, the chloroplatinates and chloraurates of which lose HCl by contact with boiling water. 2. Alkaloids, the double salts of which resist the action of boiling water. 3. Alkaloids, the double salts of which are decomposed by boiling water. The volatile alkaloids are pyridic or dipyridic hydrides.

The compounds called fixed alkaloids are bodies with a double nucleus, whether hydropyridic or hydrodiquinoleic, or with a mixed hydropyridic and hydroquinoleic nucleus in which hydrogen is replaced by one or more oxygenized radicals, and containing hydroxyl of phenolic or alcoholic function. He thinks that the future definition of an alkaloid will be : A compound of nitrogen which oxidizing bodies convert into pyridine or quinoline carbo-acids, or into a mixture of one of these acids with a fatty or an aromatic acid. (*Bul. Soc. Chim.*, **46**, *131.*) M. L.

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ANALYTICAL CHEMISTRY.

Detection of Acetone in Liquids, Especially in Pathological Cases. P. Chautard.

Acetone appears in the last stage of diabetes called acetonemia.

The best way of detecting it is by distillation, but this operation is difficult, and the quantity of urine emitted is usually very small. In 1860, Dr. Gerhardt proposed the detection of acetone by adding a few drops of sulphuric acid to the liquid ; this process is worthless. The author proposes to use as a means of detection the violet coloration given to salts of rosaniline by aldehyde and by acetone. He prepares a solution of 0.25 grammes of fuchsine in 500 c. c. of water and treats with SO_2 (gas); the liquid then becomes colorless. To detect acetone in a urine, 15–20 c. c. of it are taken, and not more than 1 c. c. of the decolorized fuchsine are added; the appearance of a coloration shows the presence of acetone. When the amount of acetone is very small 200 c. c. of urine are distilled slowly and the first 15 c. c. are tested as above; by this process $\frac{1}{10000}$ of acetone can be detected. (*Bul. Soc. Chim.*, **45**, *83*.).

M. L.

A New Method for the Estimation of Nitrogen. C. Arnold.

The process consists in heating the substance in a combustion tube of Bohemian glass, with a mixture of equal parts of soda-lime, sodium hyposulphite, and sodium formate. Very accurate results are claimed (*Ber. d. chem. Gesell.*, *1885*, *806*.)

J. H. S., Jr.

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ABSTRACTS.

RELATING TO FATS & ALLIED SUBSTANCES.

By R. W. Moore.

On the Decomposition by Heat of Acids of the Fatty Series. M. Hanriot.

The author remarks that the laws that govern the decomposition by heat of the polyatomic acids of the fatty series are imperfectly known, these acids giving rise to a large number of compounds, notably acetones which cannot be explained by any simple relation. The experiments were made in the presence of an excess of slaked lime as the decomposition was simpler under this condition. The results were as follows:

Succinic acid ($C_4H_6O_4$).

Calcium succinate yields a very small amount of liquid products, but much gas, which was found to be ethane. ($C_4H_6O_4 = 2CO_2 + C_2H_6$.)

Adipic acid ($C_6H_{10}O_4$).

Obtained by action of nitric acid on stearic acid, melted at 131°. On heating with lime a gas was given off, probably butane. ($C_6H_{10}O_4 = 2CO_2 + C_4H_{10}$).

Glycolic acid $C_2H_4O_3$.

Calcium glycolate is only decomposed at a nearly red heat. A small amount of liquid products were found in which methyl alcohol could not be recognized. The gases consist of two volumes of methane and one volume hydrogen.

Lactic acid $C_3H_6O_3$ is decomposed as follows, furnishing alcohol: $C_3H_6O_3 = CO_2 + C_2H_6O$.

Calcium lactate was dissolved in warm water, the solution distilled to drive off any alcohol present, and then mixed with twice its weight of slaked lime. It was then distilled, and the distillate was rectified. The portions passing over between 50° and 90° were dried over quick lime, treated with iodine and phosphorus and the resulting ethyl iodide was washed with water to remove acetones, dried and rectified. Another portion treated with benzoyl chloride yielded ethyl benzoate.

The yield of alcohol is greater, the larger the quantity of lime used. The above proportions gave 25% of the theoretical yield.

This formation of alcohol is of interest since alcohol can thus be obtained from glucose without fermentation.

Pyruvic acid $C_3H_4O_3$.

This acid with excess of slaked lime gave a very small quantity of aldehyde, recognized by the formation of ammonium aldehyde. The small amount is explained by the destructive influence of the excess of lime on the aldehyde formed.

Of the five acids which were made the subject of experiment, four split up in a very simple manner, losing CO_2. Glycolic acid, which is the only exception, suffers a profound decomposition due to the high temperature of the reaction. (*Bul. Soc. Chim.*, **45**, *78*.)

R. W. M.

On the Preparation of Axle Grease. A. Ihl.

To prepare English axle grease rosin oil is boiled with what is termed the "addition." To prepare this, rosin oil is boiled with slaked lime for eight or twelve hours till an homogeneous chocolate-colored mass is obtained which can transform twelve times its weight of rosin oil into pasty axle grease. Ihl finds that by adding powdered slaked lime to the original rosin oil that the same results are obtained, which dispenses with a troublesome operation.

H. Kratzer gives the following directions for preparing axle grease: Ten kilos of lime are dissolved in 3.2 kilos of water, 12.5 kilos rosin oil are then warmed in an iron kettle until vapors cease to be given off, when the dissolved lime is then added at a gentle heat. The whole is then carefully stirred until free from lumps an . until it drops with difficulty from a wooden rod.

Thus is obtained the so-called "mother grease" from which the various axle greases are prepared. Thus 30 kilos of rosin oil are mixed with 5 kilos "mother grease" to form "blue axle grease," which is generally called "Belgian axle grease." For this there is an extensive demand at a low price, on which account the bad custom is prevalent of "filling" it, that is, adding 20–50% of talc. By coloring with an alkaline solution of turmeric the so-called yellow axle grease is obtained. Paraffin oil and tar oil can be treated in the same way. (*Ding. Pol. Jour.*, **259**, *103.*)

R.W. M.

The Determination of Glycerine. W. Fox and J. A. Wanklyn.

The method given is based upon the fact that glycerine oxidized with potassium permanganate in an alkaline solution gives oxalic acid according the equation.

$$C_3H_8O_3=C_2H_2O_4+CO_2+3H_2O.$$

The oxalate is precipitated as a calcium salt, and oxalic acid and glycerine are calculated. The process is conducted as follows: Not more than 25 grms. glycerine is made alkaline with 5 grms. solid KOH. Powdered permanganate is added until a pink color is obtained. The solution is boiled for 30 minutes and the excess of permanganate decomposed with SO_2. Filter, treat colorless filtrate with acetic acid and boil; add calcium salt and collect precipitate on a filter and wash with boiling water. The oxalic acid is titrated in the usual way with permanganate. The difference in several experiments should be under 0.5%. The authors also call attention to the fact that in saponification of fats all of the alcohol used should be driven off, since it yields oxalic acid with permanganate. Acids of the acetic series do not oxidize to oxalic acid with alkaline permanganate while those of the acrylic series do. (*Chem. News*, **52**, *337.*)

R. W. M.

Adulteration of Linseed Oil with Rosin Oil, etc. H. Stockmeier.

The adulteration of linseed oil with other cheap fatty oils is precluded by the relations in price. On the other hand an adulteration with rosin oil has been repeatedly observed, and such adulteration with Scotch mineral oils is probable. India has recently begun to export flaxseed, which is worked up in England and Holland principally for the oil cake, the oil being the by-product. This oil, which cannot be distinguished from that obtained entirely from the *Linum usitatissimum*, has the property of not drying even after boiling with lead oxide, or of gradually becoming thick, under other conditions. This linseed oil has frequently come into trade as a sophistication and has there excited the greatest distrust and suspicion. (*Ding. Pol. Jour.*, **259**, *103*, *from Tech. Mitth. für Malerei*, *1885*, *58*.) R. W. M.

On the Determination of Fat in Palm Nut Meal. Wilm.

Five grms. of the previously dried and finely powdered substance are brought into a Soxhlet extraction apparatus in a cylinder made of filter paper. The water bath is heated to 65° so that the ether is driven from the flask in about four minutes. The extraction when conducted in this manner can be completed in two hours. (*Ding. Pol. Jour.*, **259**, *103*, *from Landw. Versuchsst*, *1885*, **32**, *1*.)
R. W. M.

On the Methods of Butter Analysis.

An abstract of Prof. H. B. Cornwall's report to the New Jersey State Board of Health, 1884. (*Chem. News*, **53**, *19*.) R. W. M.

Average Composition of Milk.

P. Vieth gives the results of the analysis of the milk of a herd of three hundred short horn cows made regularly for some years. The yearly means are respectively 13.0%, 13.1% and 13.0% for total solids. Cows of the Jersey, Guernsey and Ayrshire breeds give higher means and higher maxima. (*Bied. Centralbl.*. **14**, *19*.)
R. W. M.

The Oxidation of Sebacic Acid. H. Carette.

This process yields succinic and adipic acids and normal propylene dicarbonic acid. (*Chem. News*, **53**, *35*.) R. W. M.

Abstracts of American Patents Relating to Chemistry.

(*From the Official Gazette of the U. S. Patent Office.*)

December 29th, 1885.

333,149.—Dynamite. R. S. Penniman and J. C Schrader.

Consists of finely comminuted solid matter, charged with nitroglycerin, and grains of ammonium nitrate, which are enclosed with a soft or viscous envelope or coating for which nitroglycerin has no affinity.

333,150.—Dynamite. R. S. Penniman and J. C. Schrader.

333,151.—Gelatinated Explosives. R. S. Penniman and J. C. Schrader.

Consists of gelatinated nitroglycerin and protected ammonium nitrate.

333,152.—Explosive Compound R. S. Penniman.

Consists of grains of ammonium nitrate, coated or protected against deliquescence, and potassium chlorate rendered incapable of caking in mass by means of a dry powdered material, such as magnesium carbonate.

333,169.—Mixed Paint. J. Stackhouse.

A mixture of fresh air slaked lime, coal tar, Prince's metallic coal oil, brown japan, baking soda, water, benzine and shellac.

333,344.—Explosive Compound. J. C. Schrader.

333,345.—Process of Making Explosive Compounds. J. C. Schrader.

333.346.—Dynamite. J. C. Schrader.

333.347.—Dynamite. J. C. Schrader.

333.348.—Dynamite and Process of Making the Same. J. C. Schrader.

(*January 5th, 1866.*)

333,508.—Carburetor. A. J. English.

333,649.—Manufacture of derivatives of aurin. C. Lowe.

The coloring matter, named by the inventor "rosophenoline sulphonic acid," is obtained by first heating 1 part aurin with 5 parts sulphuric acid to 38-100°, separating the excess of acid in the usual manner, and then heating the product with aqueous or alcoholic ammonia, until the coloring matter is produced.

333,652.—Transforming soft sugar into hard block sugar. F. O. Matthiessen.

333,673.—Apparatus for distilling wood, etc. J. Roberts.

333,680.—Manufacture of sizing compounds for papermaker's use. C. Semper.

A neutral solution of aluminium sulphate is freed from iron by the addition of lead dioxide. It is then made basic by the addition of zinc oxide, after which sodium bicarbonate is added. The concentrated and solidified product forms a porous mass.

333,691.—Apparatus for manufacturing gas. J. L. Stewart.

333,692.—Process of manufacturing gas. J. L. Stewart.

333,693.—Apparatus for manufacturing gas. J. L. Stewart.

333,721.—Process of filtering alcohol. J. Bendix.

333,750.—Apparatus for distilling wood. L. Hansen and A. Smith.

333,786.—Solder for aluminium. J. S. Selon.

An alloy of zinc, tin and lead.

333,801.—Artificial lithographic stone. J. Wezel.

Consists of a metal plate coated with a mixture of a lime salt of a fatty or resinous acid, and calcium sulphate.

333,815.—Process of obtaining gold, silver, copper, nickel and cobalt from their ores by electrobysis. M. Body.

The roasted or oxidized ores are subjected to the action of a solution of a ferric salt, an electric current being passed through the solution at the same time. The metal is dissolved and precipitated, chlorine is generated at the positive pole, and the ferrous salt is reconverted into ferric.

333,859.—Process of and apparatus for producing gas. E. J. Jerzmanowsky.

Gas is continuously produced by passing steam and hydrocarbon through a body of lime, maintained in a heated condition.

333,860.—Process of producing gas. E. J. Jerzmanowski.

Water gas is made by injecting steam through an incandescent body of carbon, then adding to the gas steam and hydrocarbon, and passing the mixture through heated lime.

333,861.—Manufacture of soluble methyl blue from rosaniline. A. Kern.

Is prepared by sulphonizing trimethyltriphenylrosaniline.

333,872.—Explosive compound. M. F. Lindsley.

Consists of nitro-cellulose, sodium nitrate, charcoal. potassium chlorate, starch and potassium carbonate.

333,875.—Process of bleaching. W. Mather.

The cotton yarns and fabrics are first treated with a boiling solution of sodium hydrate, then subjected to the action of steam in closed vessels. While subjected to the action of the steam soda liquor is from to time introduced. After this the fabrics are washed and subjected to the action of chlorine liquor.

333,883.—Composition for preventing and removing rust. J. F. Nolan.

Consists of carbon disulphide, beeswax and sperm oil.

333,893.—Insecticide. T. W. Shugart and C. D. Clifton.

An inflammable composition, consisting of alkanet root, arsenious acid, gum camphor, iodine, phosphorous, sulphur and carbon disulphide.

333,967.—Furnace for reducing and distilling zinc from its ores. C. H. Murray.

W. R.