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Official Notices.

INTERNATIONAL CONGRESS OF MINING, METALLURGY, &c., LONDON, 1915.

At a meeting of the Executive Committee of the Congress, held at the Iron and Steel Institute on September 4th, it was decided, owing to the War, to adjourn *sine die* the holding of the Congress, and, subject to a small levy for expenses already incurred, to release the guarantors from any further liability.

COMPETITION WITH GERMANY AND AUSTRIA-HUNGARY.

FURTHER ACTION BY THE BOARD OF TRADE.

The Board of Trade have received many inquiries for names of sellers or buyers of articles of which sources of supply or markets have been interfered with by the war, and special arrangements have been made for dealing with them. Lists are being prepared and circulated of articles which inquirers desire (a) to purchase and (b) to sell. The first lists (see page 896) may be obtained on application to the Commercial Intelligence Branch. Firms interested in any of the goods mentioned, either as buyers or sellers, should communicate with the Director. An enlarged sample room will also be established exclusively for exhibiting samples of German and Austrian or Hungarian goods or materials which have competed with British products at home or abroad, especially those which are necessary for the continuance of British manufacture but which cannot be obtained from their previous sources. Firms who may wish to exhibit goods are invited to apply to the Commercial Intelligence Branch.

A catalogue library will also be opened, and firms are invited to furnish catalogues of goods formerly received by them from Germany and Austria-Hungary; these catalogues will be classified by trades in order to be readily accessible to inquirers.

The address of the Commercial Intelligence Branch is 73, Basinghall Street, London, E.C.

PATENTS, DESIGNS, AND TRADE MARKS TEMPORARY RULES (AMENDMENT) ACT, 1914.

4 & 5 Geo. 5. Chap. 73.

An Act to amend the Patents, Designs, and Trade Marks (Temporary Rules) Act, 1914.

28th August, 1914.

Be it enacted by the King's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

1. The Patents, Designs, and Trade Marks (Temporary Rules) Act, 1914, shall have effect, and shall be deemed always to have had effect, subject to the following amendments, that is to say:—

- (a) In section one, for the words "any patent or licence granted to, and the registration of any trade mark the proprietor whereof is, a subject of any State at war with His Majesty, and any proceedings on any application made by any such person under either of the said Acts," there shall be substituted the following words: "any patent or licence the person entitled to the benefit of which is the subject of any State at war with His Majesty; for avoiding or suspending the registration, and all or any rights conferred by the registration, of any design or trade mark the proprietor whereof is a subject as aforesaid; for avoiding or suspending any application made by any such person under either of the said Acts; for enabling the Board to grant, in favour of persons other than such persons as aforesaid, on such terms and conditions, and either for the whole term of the patent or registration or for such less

period, as the Board may think fit, licences to make, use, exercise, or vend patented inventions and registered designs so liable to avoidance or suspension as aforesaid":

- (b) At the end of the same section the following subsection shall be added:—

"(4) This Act shall apply to any person resident and carrying on business in the territory of a State at war with His Majesty as if he was a subject of that State; and the expression 'subject of any State at war with His Majesty' shall, with reference to a company, include any company the business whereof is managed or controlled by such subjects, or is carried on wholly or mainly for the benefit or on behalf of such subjects, notwithstanding that the company may be registered within His Majesty's dominions; and, where a patent has been granted to any person in respect of an invention declared in the application or any specification to have been communicated to him by some other person, that other person shall, for the purposes of this Act, be deemed to be the person entitled to the benefit of the patent unless the contrary is proved."

2. This Act may be cited as the Patents, Designs, and Trade Marks Temporary Rules (Amendment) Act, 1914; and the Patents, Designs, and Trade Marks (Temporary Rules) Act, 1914, and this Act may be cited as the Patents, Designs, and Trade Marks (Temporary Rules) Acts, 1914.

PATENTS AND DESIGNS (TEMPORARY) RULES, 1914.

Dated September 7, 1914.

Statutory Rules and Orders, 1914. No. 1328.

By virtue of the provisions of the Patents, Designs and Trade Marks (Temporary) Rules Acts, 1914, the Board of Trade do hereby make the following Rules:—

1. In any case in which the Board of Trade make an Order by virtue of the powers vested in them under the provisions of the Patents, Designs, and Trade Marks (Temporary) Rules Acts, 1914, and under any Rules made under these Acts or either of them, avoiding or suspending in whole or in part a Patent, or avoiding or suspending the registration and all or any rights conferred by the registration of any Design the Board may in their discretion grant in favour of persons other than the subject of any State at war with His Majesty, licences to make, use, exercise, or vend the patented invention or registered design so avoided or suspended upon such terms and conditions, and either for the whole term of the patent or registration of the design, or for such less period as the Board of Trade may think fit.

2. These Rules shall be read and construed as one with the Patents, Designs, and Trade Marks (Temporary) Rules, 1914, dated 21st August, 1914, and the Designs Rules, 1914, dated 5th September, 1914.

London Section.

NOTES ON THE APPLICATION OF TUNGSTEN SALTS TO THE ANALYSIS OF TANNING MATERIALS.

BY ALEXANDER T. HOUGH.

Whilst investigating the properties of colloidal tungstic acid from quite another point of view, its suitability for the differential analysis of tanning materials became apparent, inasmuch as it gives a reaction with the tannins,

analogous to that discovered by Lauffmann with ammonium molybdate (Collegium, 1913, No. 513, p. 10; this J., 1913, 153).

I have been able to prepare two reagents with sodium tungstate, which apparently give different results with the same tannin. The importance of this lies in the fact that it may be possible to establish the purity of a given tanning extract by the constancy of the ratio between the two results given by the different reagents.

Unfortunately, it has only been possible to carry out experiments with mangrove extract, in the manufacture of which I am at present engaged; I am therefore unable to state whether this ratio between the two results will be the same for other tanning materials or not; in the affirmative it naturally loses its importance, as to be interesting it should furnish a characteristic number for each material.

Then, again, the acidity of an extract may have some bearing upon the results, but unless it is such as to more than neutralise the sodium ion of the tungstate—and this is barely possible—I do not anticipate any exaggerated divergence from this source. In any case, even though the ratio of the two figures should prove to be unimportant, the figures themselves will be characteristic of each tanning material in the same way as the "molybdate figure" of Lauffmann.

The following table gives the composition of the two reagents I have worked with:—

TABLE I.

	Reagent 1.	Reagent 2.
	c.c.	c.c.
10% sodium tungstate	5	5
25% ammonium chloride	3	3
8% by volume HCl	—	2
Water	2	—

In both cases the ammonium chloride solution should be added last and the reagents should only be mixed immediately before use, as after a short interval they rapidly deposit crystalline tungstic acid. The 8% solution of hydrochloric acid was 0.85 normal, i.e., 2 c.c. hydrochloric acid neutralised 17 c.c. N/10 sodium carbonate or 5 c.c. of a 10% solution of sodium tungstate, freeing the tungstic acid in the colloidal state; the resulting solution did not turn methyl orange red but was slightly acid to litmus.

In using these solutions for the analysis of tanning materials, the method of Lauffmann is followed exactly, of which the following is a résumé:—

A tannin solution is prepared containing about 4 grms. tannin in 250 c.c. and 10 c.c. of the filtered solution is mixed with 10 c.c. of the reagent; the whole is filtered and 10 c.c. of the filtrate is evaporated to dryness—(A). The precipitate on the filter is now dissolved in hot water,

added to the remainder of the filtrate and the washings of both pipette and beaker, then evaporated to dryness—(B). Both residues are dried until constant in weight and the weight of the precipitate is B—A. It is necessary to determine the salted-out tungsten-tannin precipitate by this indirect method as it cannot be washed.

The amount of precipitate is now calculated on the percentage of tanning matter in the extract, and to do this the total solids in 10 c.c. of the above tannin solution are determined and the amount of tannin in this solution—(C) calculated from the non-tan figure obtained by the official method of tannin analysis using the above solution

(B—A) 100
C gives the "Tungstate figure" of the tannin using the first reagent, and the same formula gives the "Tungstic figure" of the tannin using

the second reagent, and presumably $\frac{\text{Tungstic}}{\text{Tungstate}} = K$ for any given tanning material.

The following table shows the results obtained with pure mangrove extract "Tannadine," but I cannot vouch for their absolute accuracy, as climatic and other conditions tend to make exact research a difficult matter in Borneo.

TABLE II.

	Reagent 1.	Reagent 2.
A. Solids in 10 c.c. of filtrate	0.560 grm.	0.597 grm.
B. Solids in remainder	0.755 grm.	0.802 grm.
(B—A). Weight of precipitate	0.195 grm.	0.205 grm.
(B+A). Total solids	1.315 grm.	1.399 grm.
"Tungstate figure"	149	156.5
"Tungstic figure"	149	156.5
Ratio	1.0503	
Solubles in 10 c.c. tannin solution	0.178 grm.	
C. Tannin " " "	0.131 grm.	

It will be noticed that with reagent 1 the solids are much lower than with reagent 2; this is due to the strong alkaline reaction of sodium tungstate which decomposes the ammonium chloride. With reagent 2 the added acid naturally fixes the ammonia although a small amount is still released during evaporation.

The filtrate from reagent 1 is pale red; this is probably due to the action of the atmospheric oxygen on the tannin-like matters in the alkaline filtrate. The filtrate from reagent 2 is of a pale straw colour, but upon the addition of alkali gradually develops a reddish tint. The precipitate from the latter is also lighter in colour and more easily soluble in water.

I regret my inability to follow up this work here, and request my interested colleagues to apply the reaction to and establish the constants of other tanning materials.

Finally I have to thank the Chemische Fabrik von Heyden, Radebeul, for kindly sending me samples of sodium tungstate.

Pontianak, Borneo, May, 1914.

Journal and Patent Literature.

PATENT SPECIFICATIONS may be obtained by post by remitting as follows:—

English.—8d. each, to the Comptroller of the Patent Office, W. Temple Franks, Esq., Southampton Buildings, Chancery Lane, London, W.C.

United States.—1s. each, to the Secretary of the Society.

French.—1 fr. 05 c. each, as follows: Patents dated 1902 to 1907 inclusive, Belin et Cie., 56, Rue des Francs Bourgeois, Paris (3e.); Patents from 1908 to date, L'Imprimerie Nationale, 87, Rue Vieille du Temple, Paris.

German.—1 mark each (with full particulars) to Kaiserlich Patentamt, Berlin, Germany.

I.—GENERAL PLANT; MACHINERY.

Filtration; Studies on —. J. W. Bain and A. E. Wigle. J. Ind. Eng. Chem., 1914, 6, 672—675.

To determine the amount of liquid retained by a mass of finely-divided solid when filtration is carried out under atmospheric or other pressure, or by centrifuging, experiments were made with well-rounded lake sand graded into various sizes (30-, 40-, 50-, 60-, and 80-mesh) by

screening; the 40-mesh size, e.g., being composed of grains which passed a 30-mesh but were retained by a 40-mesh screen. It was found that the pore space was practically independent of the size of grain, ranging from 34.1 to 37.7% of the total volume, and a mass of mixed small and large grains was similar in porosity to masses of either small or large grains alone. For masses of crystals such as are commonly produced by rapid cooling, the pore space may be taken as approximately 37%.