

976,931, Coke Oven and Door therefor.
 976,932, Car Construction.
 976,933, Apparatus for Draining Gas-pipes.
 976,934, Coke Oven Discharging Apparatus.
 976,935, Coke Oven and Door therefor.

From 1895 up to the present time plants were installed as follows:

COMPANY	INSTALLMENTS	LOCATION	OVENS	USE OF COKE	USE OF SURPLUS GAS
Cambria Steel Co.....	1st	Johnstown, Pa.	60	Blast Furnace	Fuel & Power
Cambria Steel Co.....	2nd	Johnstown, Pa.	100	Blast Furnace	Fuel & Power
Cambria Steel Co.....	3rd	Johnstown, Pa.	100	Blast Furnace	Fuel & Power
Cambria Steel Co.....	4th	Johnstown, Pa.	112	Blast Furnace	Fuel & Power
Pitta. Gas & Coke Co.....		Glassport, Pa.	120	Blast & Domestic	Illuminating & Fuel
New Eng. G. & C. Co.....		Everett, Mass.	400	Domestic & Locomotive	Illuminating & Fuel
Dominion I. & S. Co.....		Sydney, N. S.	400	Blast Furnace	Fuel
Dominion I. & S. Co.....		Sydney, N. S.	120	Blast Furnace	Fuel
Hamilton Otto C. Co.....		Hamilton, Ohio	50	Foundry & Domestic	Illuminating & Power
Hamilton Otto C. Co.....		Hamilton, Ohio	50	Foundry & Domestic	Illuminating & Power
Lackawanna Steel Co.....		Lebanon, Pa.	232	Blast Furnace	Fuel
Lackawanna Steel Co.....		Buffalo, N. Y.	564	Blast Furnace	Fuel
S. Jersey Gas, El. & Traction Co.....	1st	Camden, N. J.	100	Foundry & Domestic	Illuminating & Power
S. Jersey Gas, El. & Traction Co.....	2nd	Camden, N. J.	50	Foundry & Domestic	Illuminating & Power
Maryland Steel Co.....		Sparrow's Pt., Md.	200	Blast Furnace	Illuminating
Michigan Alkali Co.....	1st	Wyandotte, Mich.	15	Lime Kilns	Fuel
Michigan Alkali Co.....	2nd	Wyandotte, Mich.	15	Lime Kilns	Fuel
Sharon Coke Co.....		S. Sharon, Pa.	212	Blast Furnace	Fuel
Zenith Furnace Co.....		Duluth, Minn.	50	Blast Furnace	Illuminating
*Citizens Gas Co.....	1st	Indianapolis, Ind.	50	Metallurgy & Domestic	Illuminating
*Northwestern I. Co.....		Mayville, Wis.	36	Blast Furnace	

Dr. Schniewind's latest patents bearing upon a large vertical oven had not, at the time of his death, been carried out in actual practice. The important considerations in connection with this patent are the possibility of coking a larger tonnage of coal at a single charge, and the possible adaptation of this oven for gasifying coals which do not cake, this being accomplished by the bottom discharge.

Dr. Schniewind was a member of the following societies: American Gas Institute, Deutscher Verein fuer Gas u. Wasser-fachmaenner, National Commercial Gas Association, Illuminating Engineering Society, Franklin Institute, Verein Deutscher Ingenieure, Deutsche Chemische Gesellschaft, Verein Deutscher Eisenhuettenleute, Society of Chemical Industry,

Testing Materials, Technischer Verein von New York, Verein Deutscher Chemiker, American Association for Advancement of Science, American Chemical Society, National Association of German American Technologists, Deutsche Beleuchtungs-technische Gesellschaft, American Institute of Chemical Engineers, Inventors' Guild, Engineers' Club, Chemists' Club, Deutscher Verein, Whitehall Club, Englewood Club, Germanistic

Society, American Forestry Association, American Museum of Natural History, New York Zoological Society, National Geographical Society, Weinheimer Alter Herren Vereinigung, Deutsche Gesellschaft für Stadt New York.

To those whose privilege it was to know him personally, Dr. Schniewind's untimely death brings a deep sense of loss. No one could become acquainted with him without learning to admire the breadth, generosity and sincere kindness of his nature. His charities to his less fortunate compatriots were incessant. His work did much for the progress of the coke and gas industries and if spared he would have done much more. He is survived by a wife and two sons.

T. J. PARKER.

NOTES AND CORRESPONDENCE

LEAD POISONING

Editor of the Journal of Industrial and Engineering Chemistry:

I wish to say a few words regarding the sensational statements that have appeared lately in the press concerning the poisonous effects of white lead on workmen. It is very true that lead injected or absorbed in any form into the system produces plumbism, but the matter is not as serious as sensational newspaper writers have made it. All this talk about putty powder poisoning men in glass polishing factories is practically untrue, for putty powder happens to be tin oxide or a mixture of tin oxide and precipitated barium sulfate. The use of lead compounds in the preparation of wall papers is just as ridiculous as the arsenical poisoning which was supposed to have injured so many operatives who used green pigments for printing wall paper designs. It turned out—of course, afterwards—that the green pigments were chrome pigments, and the percentage of arsenic contained in the aniline dyes was so minute that even if they had dusted off it is a question whether they would have done any harm, for the pigments which are printed on wall paper are never released from their base.

The precautions that are taken in the white lead factories in the United States are so great that the plumbism which re-

sults is due to a large extent to the carelessness of the workmen themselves. As far as my personal experience goes, it is the hardest thing in the world for us to educate illiterate workmen that they must wash their hands before they eat, and the State is now distributing circulars printed in various languages notifying workmen that it is illegal for an employer or an employee to permit food to be consumed where these materials are manufactured. We are well aware that the transportation of high explosives is exceedingly dangerous. There have been some frightful holocausts resulting from explosions in transit, and yet it is safe to say that any civilized country would go back untold and countless years if laws were enacted prohibiting the transportation of explosives, for coal, metals and minerals would lie practically untouched in the ground; and the only safeguard is, that, knowing that the materials are necessary for the excavation of the riches of the earth, due care should be taken in the transportation of explosives. Practically the same is true in the manufacture of any hazardous material, and therefore sensational and irresponsible statements pertaining to the manufacture of any chemical, whether it be lead or nitroglycerine, are to be decried.

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no tendency to go into solution in an electrolyte, and consequently would not rust when placed in contact with air and water. Since passivity can be produced by widely different substances, he thinks it not improbable that the "electrically equable" surface produced is not always of the same nature.

THE USE OF CAST IRON BRIQUETTES IN GERMAN FOUNDRIES

Hugo Matz (*Chem. Ztg.*, 37, No. 37, 375) considers that the introduction of the use of cast iron briquettes is an innovation which has had a revolutionary effect in the iron industry, since these briquettes have made it possible to produce castings of high grade without employing specially expensive pig iron. At first, there was considerable opposition in the trade to their use, but Matz states that this has now been overcome in the German foundries.

Those foundries making a specialty of locomotive parts were the first to adopt the use of briquettes; extensive experiments have shown that steam cylinders manufactured by the addition of 15-30 per cent of briquet-chips to the castings, are of the same grade as those made from the special pig irons imported from England and Sweden. One great advantage derived from the use of the briquettes is a material reduction of carbon.

According to analyses made in the laboratories of the Sächsischen Metall-Brikettwerke, the composition of the briquettes is as follows: Silicon, 1.8 to 2.0 per cent; manganese, 0.6 to 0.8 per cent; sulfur, 0.10 to 0.13 per cent; and phosphorus, 0.7 to 0.9 per cent.

THE BISULFITE PROCESS FOR THE EXTRACTION OF ZINC

The bisulfite process, as practised at the works of the British Metals Extraction Co., Ltd., at Llansamlet, Wales, is described in *The Engineering and Mining Journal*, 95, 792. The ore, after pulverization, is roasted in mechanical furnaces, the sulfur dioxide being conveyed from the roasting furnaces to the extraction towers. The roasting is done very slowly, 24 hours being required to finish a charge.

The roasted ore is conveyed to the top of a specially designed tower where a weighed amount is mixed with a weighed amount of water, so as to form a thin pulp. This pulp descends through the tower, meeting the sulfur dioxide coming up. The agitation produced by the interior construction of the tower brings about such an intimate and effective contact of the pulp with the sulfur dioxide that by the time the pulp reaches the receiving tanks at the bottom of the tower nearly 90 per cent of the zinc has been extracted. The solution of zinc bisulfite is drawn off into an apparatus, wherein it is heated, precipitating zinc monosulfite. The latter is calcined, yielding zinc oxide, which goes to spelter furnaces, the Villiers works having been purchased for smelting it. In that works spelter assaying 99.85 per cent zinc is produced; this spelter is said to bring about \$20.00 per ton more than ordinary spelter. The extraction of zinc in the bisulfite process proper is said to be from 84 to 89 per cent in the case of the better roasted charges. In the treatment of ore containing 28 per cent zinc, the residue, which goes to the lead smelter, contains about 8.5 per cent zinc.

THE TOXICITY OF LEAD PAINTS

In 1911, Baly (see *Oil and Colour Trades J.*, May 6, 1911, 1518; *Chem. Trade J.*, May 13, 1911) stated that "a definite volatile lead compound is given off in the drying of white lead paint. It appeared to be peculiar to basic carbonate of lead and to explain the prevalence of lead poisoning among painters." Later, Baly (*J. Soc. Chem. Ind.*, 31, 515) again referred to the toxicity of white lead; he claimed that his experiments established the fact "that a poisonous volatile substance is given off paints made with white lead or red lead."

Armstrong and Klein (*Idem*, 32, 320), after a full consideration of the subject, conclude:

1. That the vapors produced during the drying of white lead pastes and paints do not contain lead.
2. That the vapors given off as paints dry consist of turpentine, for the most part, together with oxidation products of the oil, and that these latter are common to paints generally containing oil so treated that it will dry.
3. That the oxidation products formed from the oil during drying are harmless under the conditions of practice, as shown by experiments upon animals.
4. That the toxic effects sometimes experienced from drying paints are to be ascribed to turpentine and that due allowance must be made for this in dealing with the hygienic phase of the problem. Their inquiry also shows that in many cases effects have been regarded as due to "lead poisoning" which are attributable to other causes, especially to turpentine.
5. The whole available evidence indicates that the dangers attending the use of lead compounds are only the well-known mechanical dangers.
6. There is no foundation for the importation of a new element of danger into the consideration of the question of paints. Lead paints are to be objected to only on the ground that they may enter into the system through careless handling or in the form of dust such as is produced by rubbing down old paint.

THE POTASH SITUATION IN AUSTRIA

While it is hardly to be expected that the Austrian potash deposits, said to be the only ones of apparent importance outside of Germany, will be able to compete with those of the latter country, either now or in the future, *The Chemical Trade Journal*, 52, 393, reports that there is every prospect that they will be exploited on an efficient scale in the near future. A combination has been organized for the purpose of working the potash measures in the Calicz district and abutting areas, and it is hoped to be able to supply this fertilizer to a large portion of Austria at reasonable prices and at the same time to pay a remunerative dividend. The concession on which the new combination will work is to extend over a period of fifty years, and the interests of the Austrian consumer have been protected by a special clause requiring that certain limits in sale prices shall not be exceeded for domestic transactions. It is hoped, also, on behalf of the inland consumers, that the Austrian Government may be induced to impose a high export tariff on goods sold outside the country, the object being to reduce the price to consumers to a lower level even than the limit beyond which the exploiters may not invoice their goods. It has required a long time to effect this combination; but considerable political difficulties had to be overcome in respect to the Government's monopoly claim, which extends to the salt deposits of the country, in close association with which the potash deposits are found. This can, it is said, be got over by certain conditions attaching to the sale of the salt produced along with the potash. This will be the first commercial test of the value of the Austrian potash reserves.

WASTE SULFITE LIQUOR AS A FERTILIZER

The fact that waste sulfite liquor contains a large amount of organic matter and certain chemical compounds of value as plant foods has led, at various times, to experimental investigations as to its employment in agriculture. According to *Paper*, May 7, 1913, the subject has recently received full consideration in Germany. A contributor to *Fühling's landwirthschaftliche Zeitung*, 1913, No. 4, found that a cellulose mill of medium capacity, producing 500 cubic meters of waste liquor daily, was discharging 50,000 to 60,000 kilograms of organic matter in a dissolved state into a stream, to its manifest detriment, particularly in the summer. After giving the matter