

stores of letters we receive weekly, the subject of boiler explosions continues to engross the attention of a large number of experts, and a statement so consistent with the ascertained facts as that of M. Champion deserves thorough investigation.

PURIFYING WATER FROM CARBONATE OF LIME.

As a corollary to the above, we may append a description of a process for ridding water for boiler purposes of its most dangerous ingredient. One mode in use is to precipitate the lime salt before pumping the water into the boiler, either by boiling or by the addition of lime. By the latter process, sixty-six per cent of the carbonate of lime can be removed; but the proportion used must be only sufficient to effect the precipitation. Oxalate of ammonia can be employed to test the thoroughness of the process. The Northern Railway of France cleanses water for its locomotives in this way, subsequently filtering it through sponge.

ORIGIN OF FIRES.

Mr. Alexander A. Croll, a well known London gas engineer, suggests that rust on iron pipes may, under some circumstances, absorb oxygen so rapidly as to become red hot, or till a temperature, dangerous to dry timber in their proximity, is attained. Galvanizing the pipes would prevent this, if it be found, on investigation, to be a possible occurrence.

THE HOTEL DIEU, PARIS.

One of the most ornamental of the public buildings, so lavishly ordered by the late Imperial Government in France, has just been condemned as unfit for its purpose. It was a new erection for the chief hospital in Paris, and its total cost was enormous; but the Society of Hospital Physicians and Surgeons has unanimously resolved that, in its construction, it does not fulfil the conditions required by a hospital in the present state of scientific and hygienic knowledge. Two members of the society proposed the reduction of the 800 beds to 400, and using them for the reception of patients suffering with skin diseases, thus utilizing the building, but vitiating the scheme of a general hospital. This proposition has been negatived, and some alterations to the costly structure must be made, casting an additional burden on the citizens of Paris.

FURNACE FOR BURNING PETROLEUM.

Of the many attempts to construct a furnace to consume crude petroleum as fuel economically, one recently introduced in Paris deserves especial mention. The appliance for distributing the oil consists of a pipe with branches, and of a grooved grate along which the oil flows after dropping from these tubes. A wrought iron cistern contains the supply of petroleum, and is connected to the distributor by an india rubber tube. The grate is placed vertically; the air, passing between its bars, supplies the oxygen for the combustion of the petroleum vaporized by the heat of the fire. The petroleum is supplied to the grate a little in excess of the requirements of the furnace, and the surplus drops into a receiver, and is volatilized by the heat of the furnace and the vapor consumed. The flame is described by the inventor, M. Wiesnegg, as being of great intensity, a temperature impossible from coal alone being attained. This fact recommends it for use in the laboratory, as a great heat can be obtained without the use of a blast.

ANTIDOTE TO CARBOLIC ACID.

The use of carbohc acid as a disinfectant, now so common everywhere, is fraught with danger, as it is a virulent poison; and if it be accidentally taken internally, an effective antidote will be necessary. Dr. Husemann, of Göttingen, suggests, for counteracting its effects on the stomach, a new preparation which he calls *calcaria saccharata* (saccharate of lime), prepared by dissolving 16 parts refined sugar in 40 parts water, and adding 5 parts slaked lime. Digest the mixture for three days, stir occasionally, filter and evaporate to dryness.

THE NEW COINAGE IN GERMANY.

The *Borsen Zeitung* of Berlin gives details of a bill, to be introduced into the German parliament during the present session, for the regulation of the coinage of the empire, a measure the necessity of which is obvious to any one who has ever been perplexed with the multifarious currencies of the many German states. According to this sketch, the new bill establishes the mark of 100 pennies as the unit of account, and the following will be the small coins: 1. A ten penny piece, 1,035 of which will contain a pound of fine silver, and 227.7 of which will weigh a pound. 2. A five penny piece, with half the value in silver and half in copper. 3. A two penny piece in copper. 4. A one penny piece in copper. Higher silver coins: 5. A quarter mark piece, value 25 pennies. 6. A half mark piece, value 50 pennies. 7. A mark piece. 8. A three mark piece, corresponding to the present thaler. As the gold money established by the last bill was to consist of 20 and 10 mark pieces, the whole new coinage system, if this bill is carried out, will consist of ten coins—the gold pieces corresponding to the English sovereign and half sovereign, but worth respectively 5 pence and 2½ pence less; the higher silver coins (quarter mark, half mark, mark, and three mark) corresponding to the three penny piece, sixpence, shilling, and what would be a three shilling piece, if there were such a coin, but all of fractionally less value, corresponding to the less value of the gold coins; and the smaller silver and copper pieces (ten, five, two, and one pennies) corresponding to the penny and half penny, and what would be the fifth and tenth of the English penny, but all of fractionally greater value—the German ten penny piece being the 200th part of 19s. 7d., whereas the said penny is only the 240th part of 20s. The new German

coinage will thus, in small matters as well as great, approximate in a perplexing fashion to the English system without obtaining any of the advantages of identity.

Burns' Improvement in the Manufacture of Candy.

Mr. William J. Burns, of Georgetown, Kentucky, has patented an invention which has for its object to furnish a candy, pure and simple in composition, beautiful and inviting in appearance.

In making this candy, ten pounds of brown sugar and one ounce of cream of tartar, with sufficient water to make a syrup, are used. This solution is boiled and well skimmed and then boiled to a bale. At this stage, one half of a gallon of molasses is added, little by little to prevent boiling over, and boiled down to a bale. At this point, two pounds of butter are added clarified as follows: Boil the butter and skim off all impurities that may rise to the top; strain it to free it from all particles of undissolved salt; let it stand and cool from five to ten minutes. The candy, as soon as the butter is added, is boiled to a crack and poured upon marble to cool. When cold enough to work, about one fourth of it is cut off for striping in the ordinary way. The balance is then pulled white on the hook, the stripe put upon its top, and both are pulled out upon marble, cut in the middle and doubled with the white next the stripe; then pulled out again and cut and doubled until it is striped as desired. In this way the white will be upon both sides and the stripes will all be on the inside. It is then laid, from half an inch to an inch in thickness, upon a large pan, well greased, and cut or broken when cold with a small hammer.

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