

NOTES.

A two-shell type of boiler is giving considerable promise under experiment in England, withstanding, so it is said, greatly increased pressure. This is a boiler recently designed to work with safety under a pressure of 250 pounds, consists of an inner shell capable of enduring 150, surrounded by a shell, the safe working pressure of which was 100. Reducing valves allow sufficient steam to pass from the inner boiler to the space between the shells to maintain the required pressure, and the inner shell is thus subjected to an unbalanced pressure of only 150 pounds, although containing steam at 250. Each compartment contains safety valves, and is carefully tested before using.

It is well known that vegetable and animal oils are unsuitable for cylinder lubrication. In an article on the subject in the *Portfeuille Economique des Machines* M. Recour states that when colza oil was used on the railway with which he was connected, it was necessary to burn out the deposit in the ports of the locomotive cylinders after the engine had run 18,000 miles. At the end of a year's service this deposit was from .06 in. to .08 in. thick on the piston faces, and from 1-10 in. to 3/4 in. thick on the covers and steam ports. In the exhaust ports the thickness of deposit was as much as 27 in. to 35 in. On analysis the deposits proved to consist of carbonaceous matter from the decomposition of the oil, and of the oxides of iron and copper due to the wear of the valve and cylinder surfaces. When tested in the laboratory at temperatures 212° to 536° Fah., it was found that colza oil first absorbed oxygen, then gave off hydrogen, and finally broke up into oleic and stearic acid with the separation of glycerine.

A cheap non-conducting coating for steam pipes, etc., said to have been used with perfect satisfaction by a Boulogne engineering firm, is described in a recent issue of the *Revue Industrielle*. It consists of a mixture of wood sawdust with common starch, used in a state of thick paste. If the surfaces to be covered are well cleaned from all trace of grease, the adherence of the paste is perfect for either cast or wrought iron; and a thickness of 25 m. m. will produce the same effect as that of the most costly non-conductors. For copper pipes there should be used a priming coat or two of potter's clay, mixed thin with water and laid on with a brush. The sawdust is sifted to remove too large pieces, and mixed with very thin starch. A mixture of two-thirds of wheat starch with one-third of rye starch is the best for this purpose. It is common practice to wind string spirally round the pipes to be treated, keeping the spirals one centimeter apart to secure adhesion for the first coat which is about 5 m. m. thick. When this is set, a second and

third coat are successfully applied, and so on until required thickness is attained. When it is all dry, two or three coats of coal tar, applied with a brush, will protect it from the weather.

There are a great many people using incandescent lamps says *Modern Light and Heat*, who are wont to complain that the lamps are not satisfactory in their operation; they burn too few hours, or do not give light enough, or the globe soon becomes blackened. Such are some of the objections put forth, and which to our knowledge, in several cases, have caused a change in the make of a lamp, which has given no better results, simply because the fault to a certain extent has been with the user and not with the lamp itself. There is nothing which kills a lamp quicker than operating it at too high a voltage, and owners of isolated plants are often prone to do this. It is, moreover, poor economy; for if more light is required, it would be cheaper in the long run to install more lamps and run them at the proper voltage. We have seen installations, too, where dust and dirt were both too familiar friends with the incandescent lamp and where improper shades were absorbing twenty per cent. of the light. If users of incandescent lamps would first run their lamps at a proper voltage, and then see that the glass is kept perfectly clean and free from dust and dirt, and that they are supplied with proper shades, there will be better results and less cause for complaint.

The *Edmonton Bulletin* thus refers to deposits of platinum existing in the Saskatchewan district in the Canadian Northwest. The price of platinum has risen steadily during the past few years, especially since the advent of the electric light, in the production of which it is found to be an absolute necessity. The market price in London is now \$20 an ounce. In each 16 candle power light there are from four to eight grains of platinum. If six grains are taken as an average an ounce will be used in eighty lamps. Based on the increased use of incandescent lights within the last two years it is safe to say that the demand for 16 candle power lamps or their equivalent in the present year will reach 10,000,000. This means a demand for 125,000 ounces of platinum, worth at the present price over \$2,000,000. The supply is mostly drawn from mines in the Ural Mountains of Russia. Platinum is found in the Saskatchewan in connection with gold, with which it is frequently secured and sometimes adulterated. At present prices it would pay our miners to give more attention to this increasingly valuable metal, not only as a matter of present profit, but also with a view of the possibility that although the fountain head of the gold has as yet eluded discovery, the platinum might lead to the source of both these now equally precious metals.

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Many suggestions have been made for remedying the vibration and noise attendant on the working of the big engines which are employed to run dynamos. A plan which has given great satisfaction is to build hair felt into the foundations of the engine. An electric company has just had one of its ninety horse power engines removed from its foundations, which were then taken up to the depth of four feet. A layer of felt five inches thick was then placed on the foundations and run up two feet on all sides, and on the top of this the brickwork was built up. The cost of the alterations was about \$300.

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