

STEAM-BOILER EXPLOSIONS.

The *Scientific American*, in commenting on the explosion of the *St. John's* boiler, says:—

"In the history of boiler explosions these two truths stand out prominently: first, those who have investigated the subject most thoroughly are best satisfied that these disasters do not usually result from the mysterious action of uncontrollable forces, but from mechanical defects; second, when sufficient care is taken to avoid these defects, boiler explosions are entirely prevented.

No other persons have examined so many bursted boilers as the experts appointed for this purpose by the Manchester Boiler Association, and no examinations have been made with more care and fidelity. In every case, so far, those intelligent engineers have found some fatal defect in the construction of the boiler, or some impropriety in its management. Not one case has yet come under their observation in which the disaster was produced by any mysterious and uncontrollable agency.

During the long years in which the late John L. Stevens was running his steamboats on the North River, it was his practice to crawl into his boilers after every trip, to sound their plates with a hammer, and to give them a careful inspection. It was also his practice to pay his engineers twenty-five cents per day extra if they would abstain entirely from the use of ardent spirits. Mr. Steven's boilers did not explode.

The Cunard steamers have now been running twenty-five years, rolling and driving their way through the storms of the Atlantic, and no boiler in any one of them has given way. Why not? The theorists may answer as they please—our own opinion is, that it is because they are thoroughly made and properly taken care of.

In so complicated a fabric as a modern steam boiler, where hundreds of pieces of iron are fastened together in various directions, of course any unequal expansion of the several parts from the different temperatures to which they may be exposed, should be provided for; but this provision is only one element in proper construction, and there is no element which has received more attention.

STEARAFFINE CANDLES.

Our attention has been called to the new registered candles lately introduced to the trade by Messrs. Wilkie and Soames, of the Thames Soap Works, Greenwich, under the name of Stearaffine. As may be inferred from the name, they are manufactured from a mixture of stearaffine and paraffine. The result is a very white and hard candle, capable of being highly finished and tinted with the same colours used in those made from paraffine. When lighted they are semi-transparent for some distance from the top, and look very handsome. The light emitted is, if anything, superior to that produced by paraffine alone, while there is a perceptible difference in the cup in favour of the stearaffine. By way of testing their durability in comparison with other candles, we made an experiment, of which the following is the result:—

A six candle, Stearaffine, will burn 9h. 0m.
 " " Paraffine, " 8h. 25m.

A six candle, Mould, will burn 7h. 20m.
 " " Stearine " 7h. 15m. †

This proves the stearaffine to be of longer duration than either stearine or paraffine. They are made in all the known sizes, and are retailed at one shilling per pound. We are informed that the demand for them is very great, and that the manufacturers have created additional works in order to meet the increase in this branch of their business.—*Grocer.*

Useful Receipts.

Remedy For Hard Times.

Produce much; consume little; invest your money in industrial projects; vote for honest candidates, if they are nominated for you; if not, bestir yourself to get them nominated.

To Dissolve Silk.

A concentrated solution of chloride of zinc, which has been boiled with an excess of the oxyd of that metal until it does not discolor litmus, will dissolve silk. By means of the dialyser the silk can be separated from its solvent in the form of a colorless and inodorous solution.

New Way of Filling an Ice-house.

The *Utica Herald* says that the ice-house of L. R. Lyon, of Lyon's Falls, N. Y., has not been empty for twenty years, nor has a pound of ice ever been put into it. The building is constructed after the ordinary method, and when it is designed to fill it, a rose jet is placed upon the water-pipe, and as the water comes through it is chilled and dropped into the ice-house, where it forms one mass of ice.

To Weld Cast-Steel.

Cast-steel may be welded as easily as iron by using the following flux: sixteen parts of borax and one of sal ammoniac, melted and kept boiling over a slow fire for one hour, and, when cold, pulverized. The steel must then be heated as hot as you dare without burning, the powder strowed over the scarf, and proceed as with any other weld.—*Scientific American.*

Vegetable Ivory.

Vegetable ivory shows a red stain where a drop of oil of vitrol is applied, which again disappears on washing it with water. Bone or genuine ivory does not show this reaction.

Pomatum.

(1) A good pomade for general use: One pound of beef suet or two pounds of lard. Care must be taken to procure them as fresh as possible. And, after being separated from all skin and fibre, they must be pounded in a mortar, and then placed in a covered pan of earthenware or metal. This must stand in a vessel of hot water until the fat slowly becomes liquid. It will be found that all the refuse will then be separated, and will sink to the bottom of the pan. The fat in its liquid state is then passed through a filter (clean flannel is the