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Artificial Respiration.

The *Medical Press and Circular*, 1880, informs us that in a recent communication to the French Academy, Professor Fort raises again the question of premature interments. One fact he mentions is, that he was enabled to restore to life a child three years old, by practicing artificial respiration on it four hours, commencing three hours and a half after apparent death. Another case was communicated to him by Dr. Fournol, of Billancourt, who, in July, 1878, reanimated a nearly drowned person after four hours of artificial respiration. This person had been in the water ten minutes, and the doctor arrived one hour after asphyxia. Professor Fort insists also on the utility of artificial respiration in cases of poisoning, in order to eliminate the poisons from the lungs and glands. The length of time it is desirable to practice artificial respiration in any case of apparent death from asphyxia, Professor Fort has not yet determined, but his general conclusion is that it should be maintained perseveringly for several hours.

The Efficiency of the Water Trap.

A contemporary publishes an important experimental investigation by Dr. Neil Carmichael concerning the trap and water closet system, and their relation to sewage products, gaseous and others. As the result of this investigation, Dr. Carmichael came to the conclusion that an efficient water trap excludes soil pipe atmosphere to such an extent that what escapes through the water is so little in amount, and so purified by filtration, as to be perfectly harmless. The water trap, he further concludes, stops entirely the passage of all germs and particles from the air of the soil pipe, including the specific germs or contagia of disease, which, so far as is known, are particulate. He thus traverses entirely the belief so largely entertained that the water of a trap, however perfect in arrangement, will absorb the air of the soil pipe until saturated, and then give it off harmfully on the house side. He would rehabilitate the old faith in the sufficiency of the water to insure safety, and he would refer the harm from traps to their imperfect sealing, or to various deteriorations in the structure of the water closet or soil pipe which permit direct communication between the air of a house and the air of the soil pipe. The series of experiments on which Dr. Carmichael has founded these conclusions are exceedingly ingenious, and would certainly appear to justify them, but we doubt whether he has been sufficiently careful in indicating the conditions under which the safety of the water trap can be secured.—*Lancet.*

THE BABCOCK & WILCOX WATER TUBE BOILER.

Efficiency, economy in the use of fuel, and safety are qualities which are absolutely requisite in a boiler in these days of the wide application of steam, and notwithstanding the care taken in the construction and use of shell boilers for either high or low pressure, neither the user nor the people in the vicinity of them can feel any degree of safety.

The boiler shown in our illustrations is not only one of the most economical and efficient, but it is absolutely safe from destructive explosion at any pressure, and possesses, in addition, the quality of lightness and portability of parts, a very important feature when the matter of transportation is considered.

Our front page illustration represents a nest of four boilers of the Babcock & Wilcox type. These boilers were recently constructed, and are now in successful operation at the Standard Oil Company's Refinery, Greenpoint, L. I. The side elevation gives an excellent idea of the construction of the boiler and furnace, and the relative arrangement of the various parts.

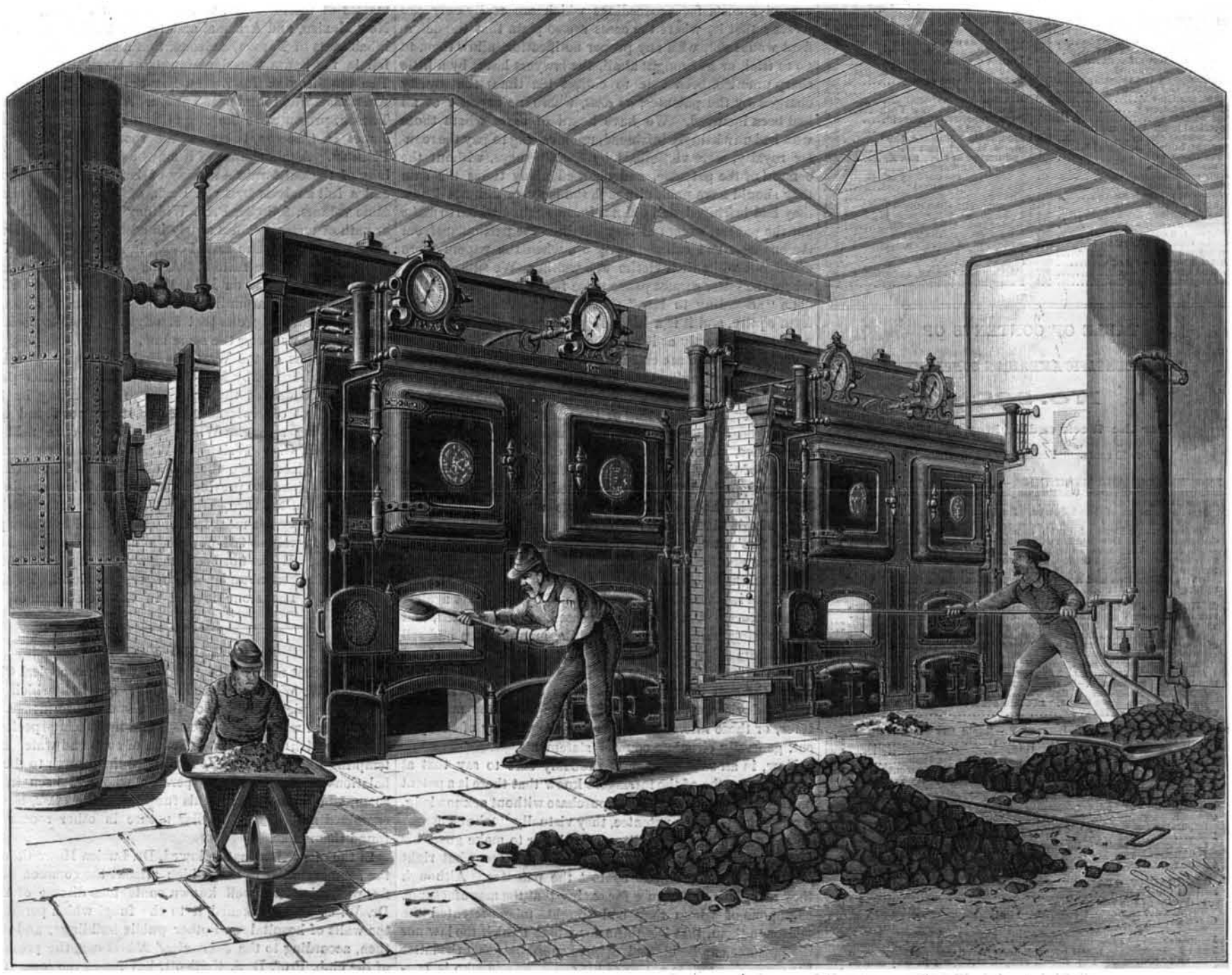
It will be seen that the construction of the boiler is radically different from the ordinary flue boiler, in which the water surrounds the tubes and flues, as in this boiler the order of things is reversed; the water circulates through the tubes and two drums, the exterior surface of which affords a very large and effective heating surface.

This boiler is composed of lap-welded wrought iron tubes, placed in an inclined position, and connected with each other, and with a horizontal steam and water drum, by vertical passages at each end, while a mud drum connects the tubes at the rear and lowest point in the boiler.

The end connections are in one piece for each vertical row of tubes, and are of such form that the tubes are "staggered" (or so placed that each horizontal row comes over the spaces in the previous row). The holes are accurately sized, and the tubes fixed therein by an expander. These are connected with the water drum, and the mud drum also, by short tubes expanded into bored holes, doing away with all bolts, and leaving a clear passage way between the several parts. The openings for cleaning opposite the end of each tube are closed by hand-hole plates, the joints of which are made in the most thorough manner by milling the surfaces to accurate metallic contact. They are tested and made tight, under a hydrostatic pressure of 500 pounds per square inch, iron to iron, and without packing, rubber, or other perishable substance.

The fire is made under the front or higher end of the tubes,

[*Continued on page* 325.]



BABCOCK & WILCOX BOILERS AT THE STANDARD OIL COMPANY'S REFINERY GREENPOINT, L. I.