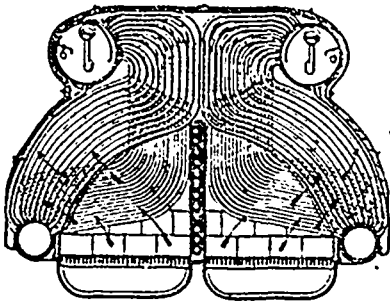
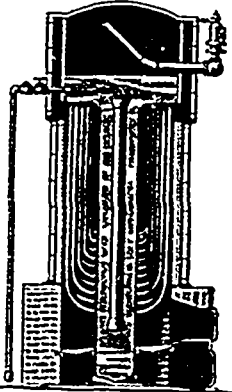


NO. 31 1890 - SINGLE BOILER.



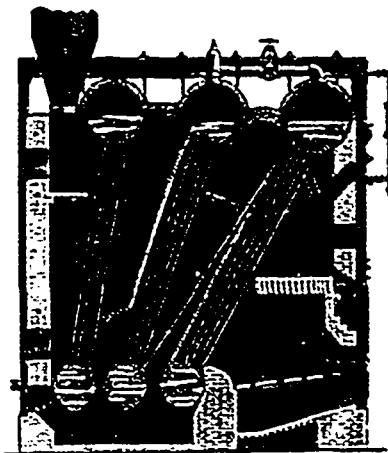
NO. 32. 1890. - DOUBLE BOILER, REPORT INTERNATIONAL ENG. CONGRESS, 1894.



NO. 33. 1893. - TRADE CIRCULAR.

HYDR either turned Paxman's 1870 design inside out, or cut off the top and put a head on Rogers' & Black's boiler of 1876. Mr. Smith also invented and christened it with his family name.

PIERPONT added two more cylinders to the bottom of Stirling's design (?), and altered the name. If one wrought metal mud drum exposed to exterior corrosion is good, three must be better.



NO. 34. 1893. - TRADE CIRCULAR.

(And with all these examples people are still trying to bend tubes into new forms, so as to "make a boiler.")

A FEW IDEAS AS TO CLEANING.

Strange to relate, the originator of this bent-pipe unit—Gurney, in 1826—recognized the necessity of removing the scale left by the evaporation of water, he not having attained to either of the theories of keeping it clean by the force of circulation or by evaporating salts of lime into steam. In one of his publications he recommended, "for a boiler made of iron tubes, the use of one part of muriatic acid to one hundred parts of water, to be left in the boiler a sufficient length of time to dissolve the incrustation, and for a boiler made of copper tubes, one pound of salt, half a pound of sulphuric acid, and four gallons of water. When dissolved, a small fire was to be started, and the boiler blown out under pressure."

Later exploiters in this line, more versed in "commercial engineering," have generally advocated the rapid-circulation theory as an efficient cleaning medium.

One notable maker recommended the introduction of a couple of buckets of sharp sand into the boiler, claiming that the circulation would carry it around and scour the scale from the tubes. Whether or not he furnished a particular quality of sand that would just wear out at the point when the scale was removed, and so save wear on the boiler, we are not posted.

Another maker strung a tube scraper on a chain, like an old-fashioned chain-pump. The man in the top drum let this down through one of the tubes (if the scale had not closed it up too much) to a man in the bottom drum, and these unfortunate specimens of humanity were supposed to sit like two half-closed jack knives, see-sawing the scraper back and forth, until either the scale, their muscles, or the seats of their breeches were worn out.

The early designs were creditable attempts to carry high pressures safely, with the means then available. The later ones are all based on crowding the greatest possible amount of heating surface into a given space, at the least prime cost for material and labor irrespective of either economy, durability, or good engineering.

In the majority of these designs it is impossible to clean a tube, to tell which tube leaked, or to replace a defective tube without removing several good ones.

Boilers of such units should come under the generic name of either the "macaroni" or "vermicelli" class. Look at the elements as they come to the scrap heap.



A SMELTER of fifty tons capacity is to be built at Midway, B.C., by a syndicate of American capitalists.

THE shipments of ore and bullion from West Kootenay, B.C., from Jan 1 to Sept, 1895, are estimated at 17,403½ tons, valued at \$1,519,846.

PROF. MILLER, of the Kingston Mining School, is in charge of the mining school prospecting party who have recently inspected and analyzed silver deposits in the township of Barrie, Ont. Other mining properties in that district have also been examined and very satisfactory results obtained.

SIR JOHN SCHULTZ, in an interview with a Winnipeg reporter, says that north of Edmonton there are oil deposits of larger area probably than the deposits in any other part of the world, and in the future, through the development of these fields, Edmonton will be one of the most important cities of Canada.

P. PICHETTE, of St. Pierre, Island of Orleans, Que., has discovered on his farm a rich seam of anthracite coal. The seam is only six or seven inches broad at the surface, but increases as it goes down perpendicularly. Mr. Globensky, Provincial Inspector of Minerals, has made an inspection of the discovery, and is sure that the vein is a valuable one.