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**Improved Steam Boiler.**

The steam boiler herewith shown in section represents an improved method of constructing generators of this class, so as to obtain the greatest benefit from the fuel. By the arrangement of the heating surfaces with reference to the grate or fire-bar area, a large amount of surface is secured for evaporating water. The construction of the boiler is simple and has merit.

The plan is simply to insert a cylinder boiler, A, filled with tubes, B—of any desired area (see Figs. 1 and 2), but not so small that the circulation of the water will be impeded, or the boiler rendered liable to foam—in another boiler or water jacket, C. In the

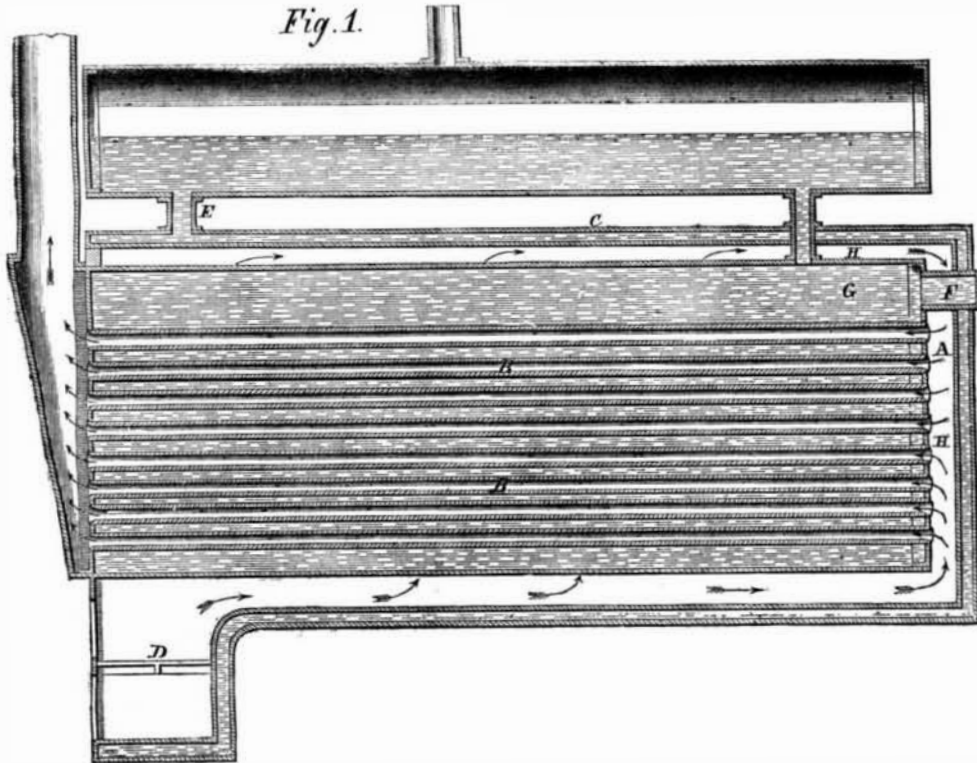
tubes, is taken up or arrested by them, so that when it reaches the chimney it has comparatively little value as an evaporating agent. The drum or cylinder above the main boiler is also partially filled with water, and it is in this that the gage-cocks are set; when water is shown at this point there is a moral certainty that there is no lack below in the vital parts. Steam is taken from the drum as usual, and the safety valve and their fixtures are also placed there. This boiler would make an excellent one for factories or saw-mills where timber is worked; as slabs, shavings and other odds and ends of refuse wood could be burnt to great advantage.

This boiler was patented by R. S. Harris of Du-

fact, they seem and feel for the time regenerated; and though they lie there, the shameless and impassive slaves of sensuality and lust, their senses are evidently steeped in bliss. Aroused, however, from their dreams and delusions, the potency of the charm exhausted—driven from their hell by its proprietor—see them next morning walking with faltering step, eyes dull as lead, cheeks hollow as coffins, to their work.

**VALUE OF SCRAP IRON.**—At the sale in Virginia, of nearly 2,000 tons of wrought and cast scrap iron, eight worn-out locomotives brought prices ranging from sixteen hundred to twenty-five hundred dollars each. Old car wheels sold for forty-five dollars and a half per ton. Car axles, seventy-five dollars per ton. Wrought iron scraps fifty-five dollars per ton. Old steel springs, one hundred and twenty-seven dollars per ton. Old nails, sixty-one dollars per ton. Cast scrap iron, thirty-seven dollars per ton. A large number of iron dealers from New York, Pennsylvania and other States were present. The "ring" formed to keep down the prices was broken by the competition of the bidders.

Fig. 1.



**HARRIS'S IMPROVED STEAM BOILER.**

lower part of this jacket the furnace, D, is set. The water-jacket is further surmounted with a dome or cylinder, which is connected to it by short tubes, E. At the front end of the boiler the usual breeching or up-take is attached, through which all the products of combustion find their way to the air. There is also a

buque, Iowa, on Dec. 15, 1863, through the Scientific American Patent Agency. For further information address the inventor as above.

**An "Opium Hell" in Java.**

What spirituous liquors are for the European, opium is in Java for the Mahomedan and Chinaman. A European of the lower classes may sit in his tap-room and debase himself by his sottishness; but he does it with an uproarious merriment which would make one think he was really happy, spite of the headaches and delirium tremens he may know are in store for him. But in an opium hell all is as still as the grave. A murky lamp spreads a flickering light through the low-roofed suffocating room in which are placed bale-bales, or rough wooden tables, covered with coarse matting, and divided into compartments by means of bamboo-reed wainscotting. The opium smokers—men and women—lost to every sense of modesty, throw themselves languidly on the matting, and, their heads supported by a greasy cushion, prepare to indulge in their darling vice. A small burning lamp is placed on the table, so as to be easily reached by all the degraded wretches who seek forgetfulness or elysium in the fumes of opium. A pipe of bamboo-reed, with a bowl at one end to contain the opium, is generally made to do service to two smokers. A piece of opium about the size of a pea costs sixpence (a day's wages); but it is sufficient to lull by its fumes the sense of the smoker. These fumes they inhale deliberately, retaining them in the mouth as long as they can, and then allowing them gradually to exhale through the nostrils. After two or three inhalations, however, the opium is consumed and the pipe falls from the hands of its victim. At first the smokers talk to each other in a whisper scarcely audible, but they soon become still as the dead. Their dull sunken eyes gradually becoming bright and sparkling; their hollow cheeks seem to assume a healthy roundness; a gleam of satisfaction—nay, of ecstasy—lightens up their countenances as they revel in imagination in those sensual delights which are to constitute their Mahomedan paradise. Emervated, languid, emaciated as they are, in

THE  
**Scientific American,**  
FOR 1864!

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**Munn & Co., Publishers.**

37 Park Row, New York.

FROM THE STEAM PRESS OF JOHN A. GRAY & GREEN.

Fig. 2.



man-hole, F, and space, G, by which access may be had to the inside of the boiler. The operation of this boiler and the course of the flame and heat is shown by the arrows; from the furnace the calorific rises through the passages, H, and completely surrounds the internal cylinder, and passing through the small