

(No Model.)

J. MCGREGOR & J. L. JACKSON.
STEAM GENERATOR.

No. 573,688.

Patented Dec. 22, 1896.

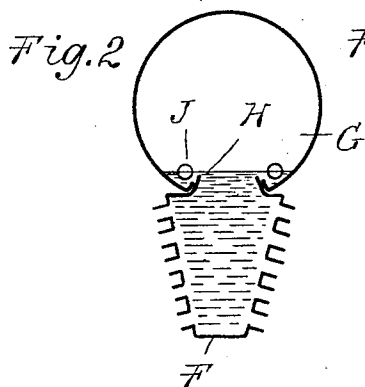
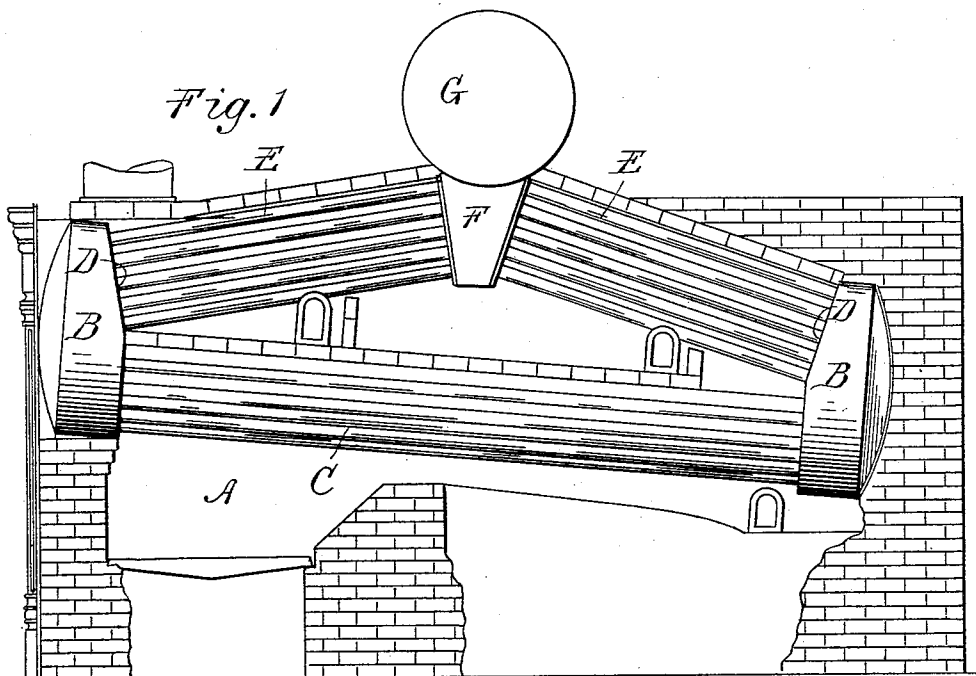


Fig. 3

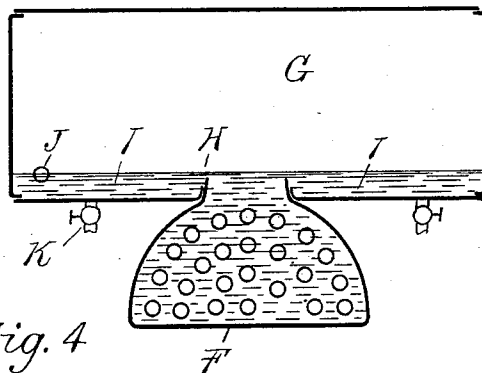
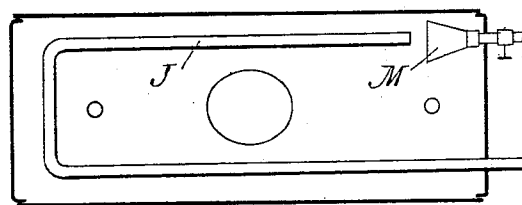


Fig. 4



Witnesses:
P. M. Hulbert
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Inventors:
James M^cGregor
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By *W. M. H. H. H.* Attys.

UNITED STATES PATENT OFFICE.

JAMES MCGREGOR AND JOHN L. JACKSON, OF SAGINAW, MICHIGAN; SAID
MCGREGOR ASSIGNOR TO EDGAR D. CHURCH, OF SAME PLACE.

STEAM-GENERATOR.

SPECIFICATION forming part of Letters Patent No. 573,688, dated December 22, 1896.

Application filed August 24, 1896. Serial No. 603,772. (No model.)

To all whom it may concern:

Be it known that we, JAMES MCGREGOR and JOHN L. JACKSON, citizens of the United States, residing at Saginaw, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvements in Steam-Generators, of which the following is a specification, reference being had therein to the accompanying drawings.

10 The invention consists in the construction of a steam-generator and particularly in the construction of the steam-dome into which the feed-water is delivered, the steam-dome being provided with a sediment-chamber whereby
15 the water is purified before passing into the tubes of the boiler, the sediment being retained in the dome, from which dome it may be quickly blown out or otherwise removed, all as more fully hereinafter described.

20 In the drawings, Figure 1 is an elevation of a steam-generator substantially of the type shown in United States Patent No. 544,414, of August 13, 1895, to which the present improvement is applied, the supporting-walls
25 being shown broken away. Fig. 2 is a longitudinal section through the steam-dome and its connections with the water-space of the boiler. Fig. 3 is a vertical central longitudinal section through Fig. 2. Fig. 4 is a horizontal sectional section through the steam-dome.

A is the furnace.

35 B are two end shells connected by the inclined pipes C in the lower portions and having the inclined faces D, in which are the tubes E, which connect into a drum F in the middle. Above this drum is the steam-dome G. The connection from the water-space of the boiler (which in this construction comprises the shells B, the tubes, and the drum F) is slightly above the bottom of the steam-dome. In this construction we have shown
40 this effected by forming the flange H around the edge of the connection from the drum F into the steam-dome, which forms a shallow drum-pan or sediment-chamber I in the bottom of the steam-dome.

45 J is the feed-pipe leading into the steam-dome and discharging into this sediment-chamber. This pipe is arranged, preferably, as shown in Fig. 4, coming in at one end, ex-

tending around the sides of the sediment-chamber, and discharging at the same end. The object of this is to prevent an undue cooling of the metal of the dome at one point. 55 We deem it also desirable to discharge the water away from the connection between the dome and the water-space of the boiler, so as to give the greatest possible opportunity for the deposit of the sediment before the water
60 descends into such water-space.

K are blow-off pipes connecting into the sediment-chamber, and M is a skimmer extending through one end of the dome. These pipes are all provided with suitable controlling-valves. In this construction of sediment-chamber and feed-pipes we find in practice that the sediment in the water will nearly all be collected in this sediment chamber or pan, and the water in the tubes of the boiler will
70 thus be largely freed from its impurities with all the satisfactory results which are known to accrue from the use of pure water. It is much easier to get at and clean the dome, and it is found that a much larger per cent. of the
75 sediment will settle quickly if brought into this hottest point in the boiler than if brought into the lower part, as usual.

What we claim as our invention is--

1. In a steam-generator, a steam-dome, a 80 water-space, a connection from the water-space of the boiler into the steam-dome communicating with the latter above the bottom thereof, whereby a sediment-chamber is formed in the bottom of the dome, and the
85 water-supply leading into the dome.

2. In a steam-generator, a steam-dome, a water-space, a connection from the water-space of the boiler into the bottom of the dome, a flange around this connection, forming a
90 sediment-chamber in the bottom of the dome, and the water-inlet pipe into the dome.

3. In a steam-generator, a steam-dome, a water-space, a connection from the water-space of the boiler in the bottom of the dome, 95 a flange around this connection forming a sediment-chamber in the bottom of the dome, the water-inlet pipe entering one end of the dome, passing around and discharging at the same end, substantially as described. 100

4. In a steam-generator, a steam-dome provided with an opening in the bottom thereof,

a boiler communicating with the dome through said opening, an upwardly-extending flange around said opening whereby a sediment-chamber is formed in the bottom of the dome, 5 and a water-supply leading into the dome.

5. In a steam-generator, a steam-dome provided with an opening in the bottom thereof, a boiler communicating with the dome through said opening, an upwardly-extending flange 10 around said opening whereby a sediment-chamber is formed in the bottom of said dome, a feed-water supply leading into the dome, and a blow-off for said sediment-chamber.

6. In a steam-generator, a steam-dome, the water-tubes, a drum with which the water- 15 tubes connect, said drum extending into and communicating with the steam-dome above the bottom thereof, and a feed-water supply to said steam-dome.

In testimony whereof we affix our signatures in presence of two witnesses.

JAMES MCGREGOR.

JOHN L. JACKSON.

Witnesses:

EDWIN KERSTEN,

M. B. O'DOHERTY.