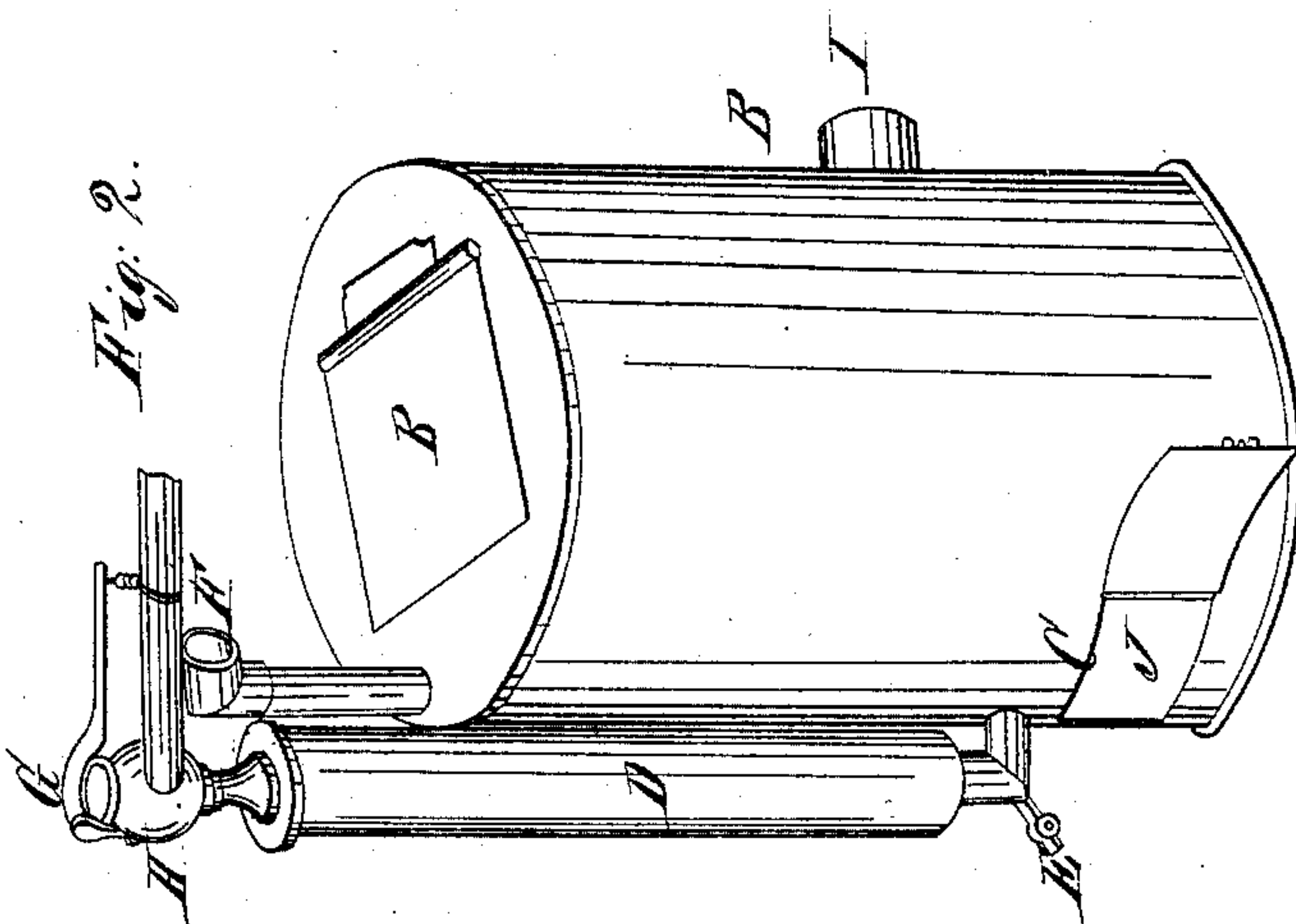
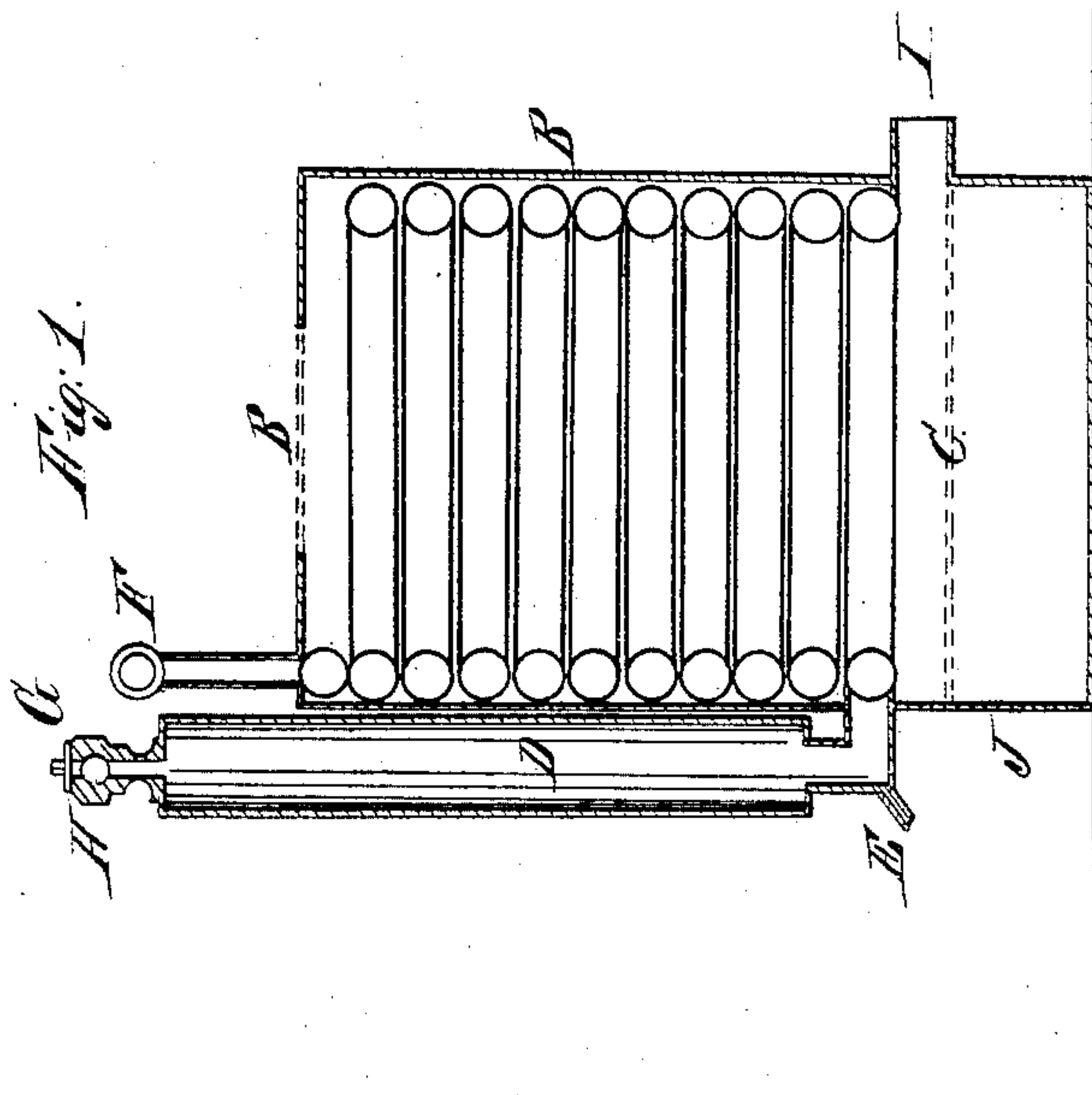


J. Battin,
Steam-Boiler Water-Tube.
N^o 35,865. Patented July 15, 1862.



Witnesses:
J. J. Young
C. C. Co.

Inventor:
Joseph Battin

UNITED STATES PATENT OFFICE

JOSEPH BATTIN, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN STEAM-GENERATORS.

Specification forming part of Letters Patent No. 35,865, dated July 15, 1862.

To all whom it may concern:

Be it known that I, JOSEPH BATTIN, of the city of Newark, in the county of Essex and State of New Jersey, have discovered a new and useful Improvement in Generating Steam; and I do hereby declare the following to be a full and exact description of the same, reference being herein had to the drawings accompanying this specification, making part of the same.

The nature of my improvement consists in so arranging and combining the water-feeder of steam-generators as to inject the water at the point farthest from where the fire comes in contact with the generator; and applies more particularly to that class of steam-generators which are not, properly speaking, water-boilers.

In the drawings, Figure 1 is a sectional view of a coil-generator. Fig. 2 is a perspective view of the furnace containing the generator.

The same letters refer to the same parts in each figure.

A shows a coil of pipe in which steam is generated; B, an outer case containing the coil and the furnace. C is the fire-grate, lined with brick when coal is used. D is the steam-chamber; E, the test-cock for ascertaining the quality of the steam and for blowing off surplus water. F shows the point of injection for this form of a coil-generator. G is a safety-valve; H, the steam-pipe; I, the smoke-pipe; J, the ash-pit and draft.

It appears that as yet no attempt to convert water into steam as fast as it is needed for use in such an instantaneous manner as to supersede the necessity of a reservoir of hot water has ever been a practically useful success. The improvement in the above arrangement is found to remove the obstacles in the way of its coming into common use.

I am aware of the various ways of injecting water upon hot plates and of forcing it into hot coils of pipe, and of the troubles from the chemical changes in the water in such cases. By the introduction of the water at a distance from where the fire comes into contact with the generator the water meets the heat at the lowest temperature and trickles down through the coil or over a series of plates, and ere it reaches the heated surface that would make it dance in spheroids, it is all converted into steam, and, if desired, it can then be superheated by passing through an ascending pipe into the top of the steam-chamber.

I do not broadly claim the feeding water into the top of steam boilers or generators. Neither do I claim using heated plates or coils of pipe for the generation of steam; but

What I do claim, and desire to secure, is—
The steam-generator, when constructed and fed substantially in the manner and for the purpose hereinabove specified.

JOSEPH BATTIN.

Witnesses:

C. E. COX,
H. F. BALDWIN.