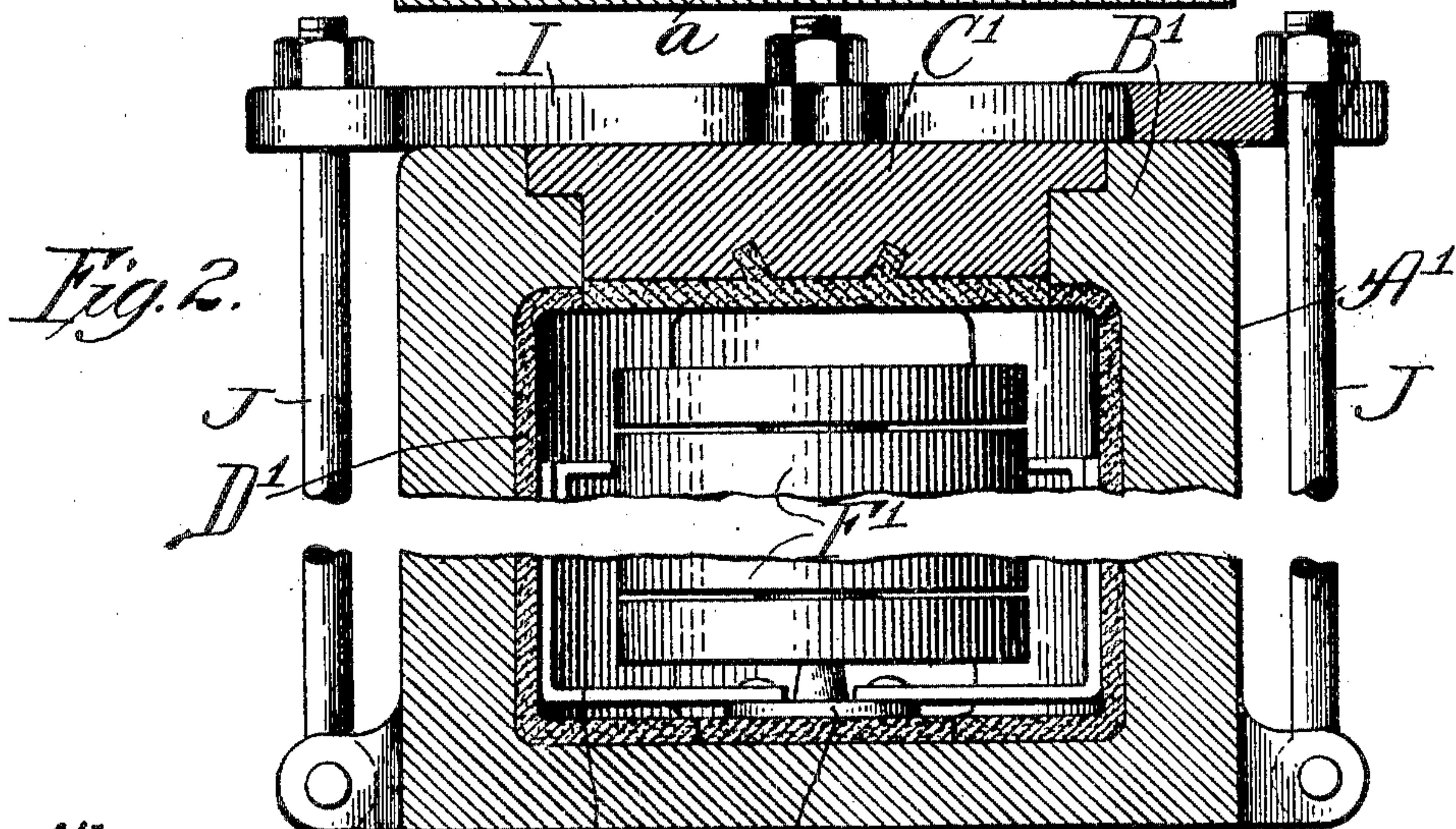
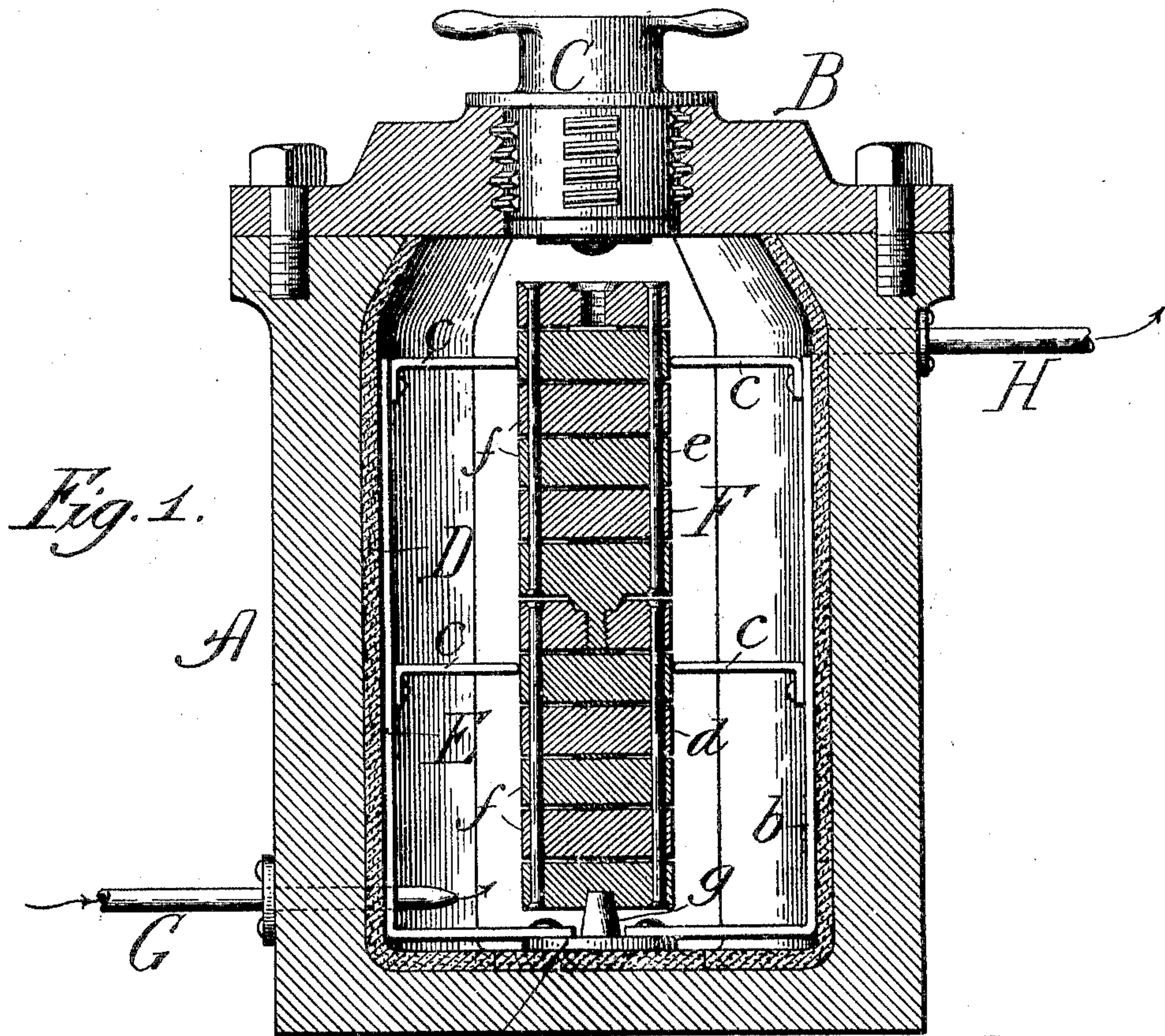


No. 797,809.

PATENTED AUG. 22, 1905.

W. I. HOOVER.  
STEAM GENERATOR.  
APPLICATION FILED NOV. 14, 1903.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

WALTER IRVING HOOVER, OF AURORA, ILLINOIS.

## STEAM-GENERATOR.

No. 797,809.

Specification of Letters Patent.

Patented Aug. 22, 1905.

Application filed November 14, 1903. Serial No. 181,198.

*To all whom it may concern:*

Be it known that I, WALTER IRVING HOOVER, a citizen of the United States, residing at Aurora, in the county of Kane and State of Illinois, have invented a new and useful Improvement in Steam-Generators, of which the following is a specification.

My invention relates particularly to methods of producing superheated steam and to high-pressure steam-generators; and my primary object is to provide means whereby very high pressures may be obtained without the necessity of subjecting the boiler itself to an exceedingly hot flame which might crack or otherwise injure the boiler.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 represents a sectional view of one embodiment of my invention, and Fig. 2 a broken sectional view of a modification thereof.

Referring to Fig. 1, A represents a cylinder or steam-generating chamber provided with a removable top B, equipped centrally with a more readily movable plug C; D, a fire-clay or other refractory and non-conducting lining for the chamber; E, a supporting-frame within the chamber; F, a heat-giving or calorific body supported centrally in a vertical position in the chamber; G, an inlet-pipe through which hot water (or saturated steam) is forced or injected into the chamber, and H an outlet-pipe for the superheated or gas-like steam. The plug C may be connected with the head B by threads having portions cut away to permit quick connection and disconnection in a manner well understood in the breech construction of cannons and in other constructions, or any other expedient for effecting the desired result may be employed. The lining D and support E may be sectionally constructed, as indicated, to permit of assembling the parts. The support E preferably comprises a bottom member or plate *a*, L-shaped members *b* connected therewith and having their vertical portions in contact with the lining D, and pairs of arms *c*, having their free ends separated by a space sufficient to receive the member F freely. The member F comprises sections *d* and *e*, each of which is in turn composed of suitably spaced and joined sections or circular disks *f*. The lowermost disk of the section *d* has a central socket seated on a cone *g*, carried by the plate *a*, and the uppermost disk thereof has a threaded socket receiving

a threaded stud with which the lowermost disk of the section *e* is provided. The uppermost disk of the section *e* has a threaded socket which may receive either a threaded shank of another section (if a taller generator is employed) or the threaded shank of an eye or the like, (not shown,) which may be employed as a handle to remove the core. The core may be of cast-iron or it may be of any suitable material having a high heat capacity and suitable conductivity.

The manner of use will readily be understood. A suitable number of generators or superheaters will be arranged in a battery with connections permitting one or more to be employed to supply steam to a motor, the steam being taken from the generator through a reducing-valve, if desired. At proper intervals each generator is cut out from the battery and charged or recharged with a preparatorily-heated core. As the jet or spray of water (in small volume) enters the generator it is immediately vaporized and passing about and through the spaces or passages of the core is highly superheated, producing high pressure.

The size of the core may bear any desired ratio with relation to the size of the chamber, so that the pressure may be varied within wide limits. In the modification of Fig. 2 the core is shown of relatively larger size, and the main parts bear the prime letters of the corresponding parts of Fig. 1. In this modification the top B' is reduced to a mere flange provided with a socket to receive the flanged plug C', the latter being secured by a plate I and bolts J.

Any desired materials may be employed throughout, and the construction and form may be varied widely without departure from my invention, the gist of which lies in the improved method of and broadly-considered means for generating or superheating steam or other fluid.

Any suitable expedient may be adapted for mechanically effecting removal and insertion of the cores.

What I regard as new, and desire to secure by Letters Patent, is—

1. A generator, comprising a closed steam-chamber, admission and emission conduits communicating therewith, and a removable calorific body within said chamber and directly exposed to the fluid therein, for the purpose set forth.

2. A generator, comprising a closed steam-



chamber, admission and emission conduits communicating therewith, a readily-opening strongly-secured closure for said chamber, and a removable calorific body within the chamber and directly exposed to the fluid therein, for the purpose set forth.

3. The combination of a closed steam-chamber, induction and eduction conduits therefor, and a removable calorific body within said chamber having passages for fluid, said body being directly exposed to the fluid for the purpose set forth.

4. The combination of a closed chamber having a readily-opening strongly-secured closure, induction and eduction conduits

communicating with said chamber, and a sectionally-constructed removable calorific body having fluid-passages, for the purpose set forth.

5. The combination of a closed steam-chamber having a suitable closure and induction and eduction conduits, a refractory lining for said chamber, and a removable calorific body directly exposed to the fluid in said chamber, for the purpose set forth.

WALTER IRVING HOOVER.

In presence of—

R. H. ROBINSON,

MARY C. BOORKMAN.