

No. 736,743.

PATENTED AUG. 18, 1903.

H. W. KOLLE.
WATER TUBE STEAM GENERATOR.

APPLICATION FILED DEC. 17, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1

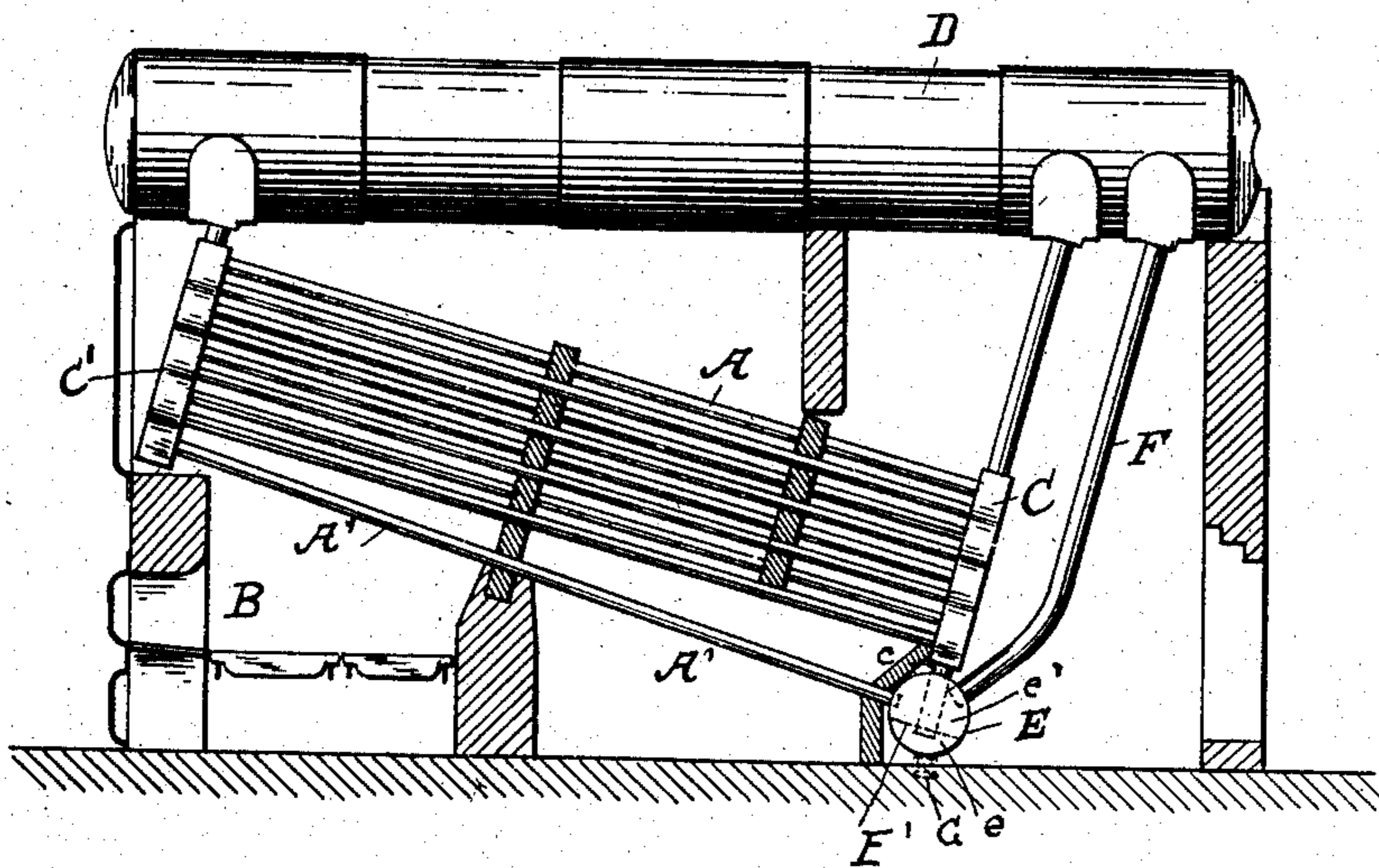
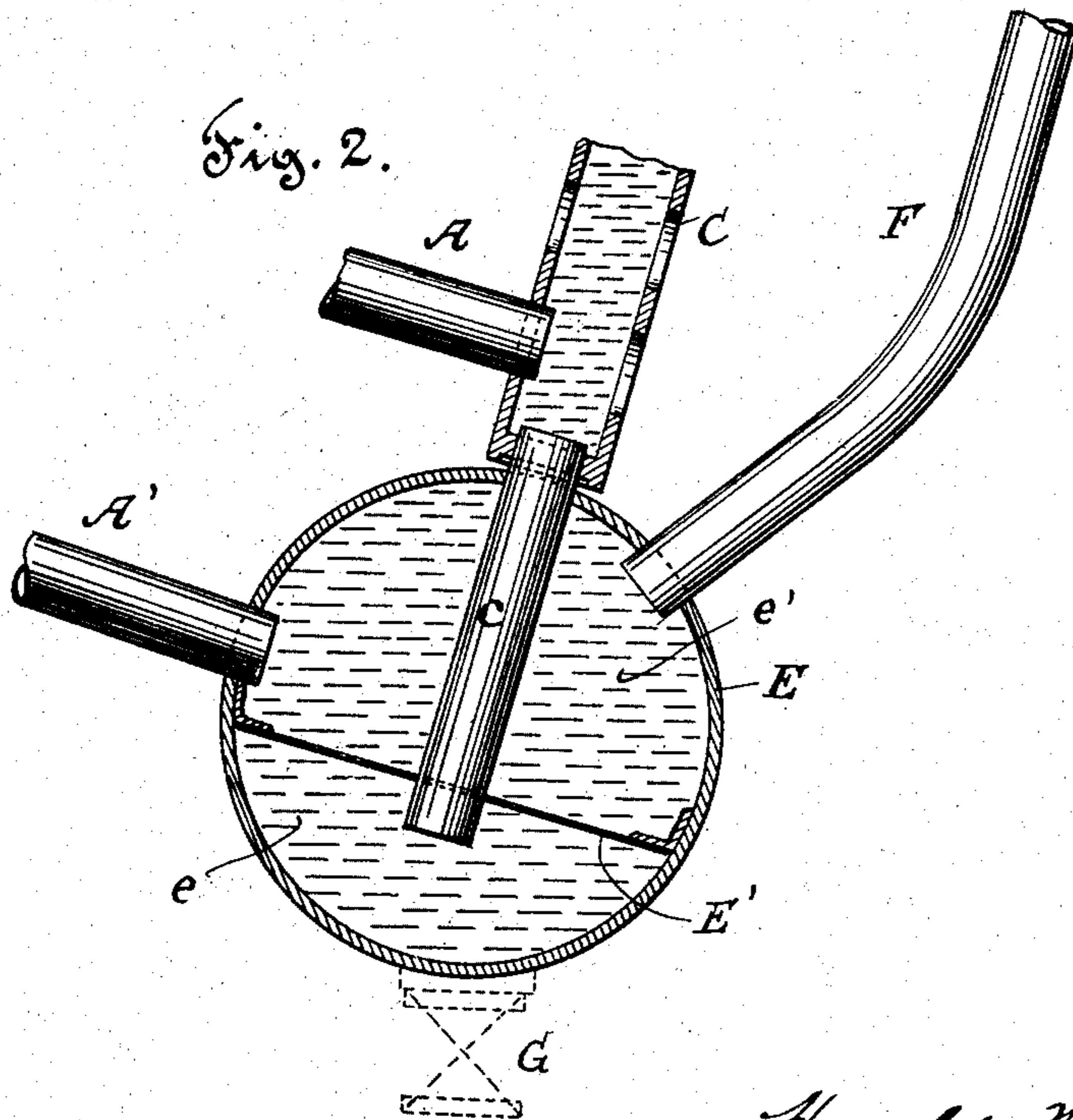


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

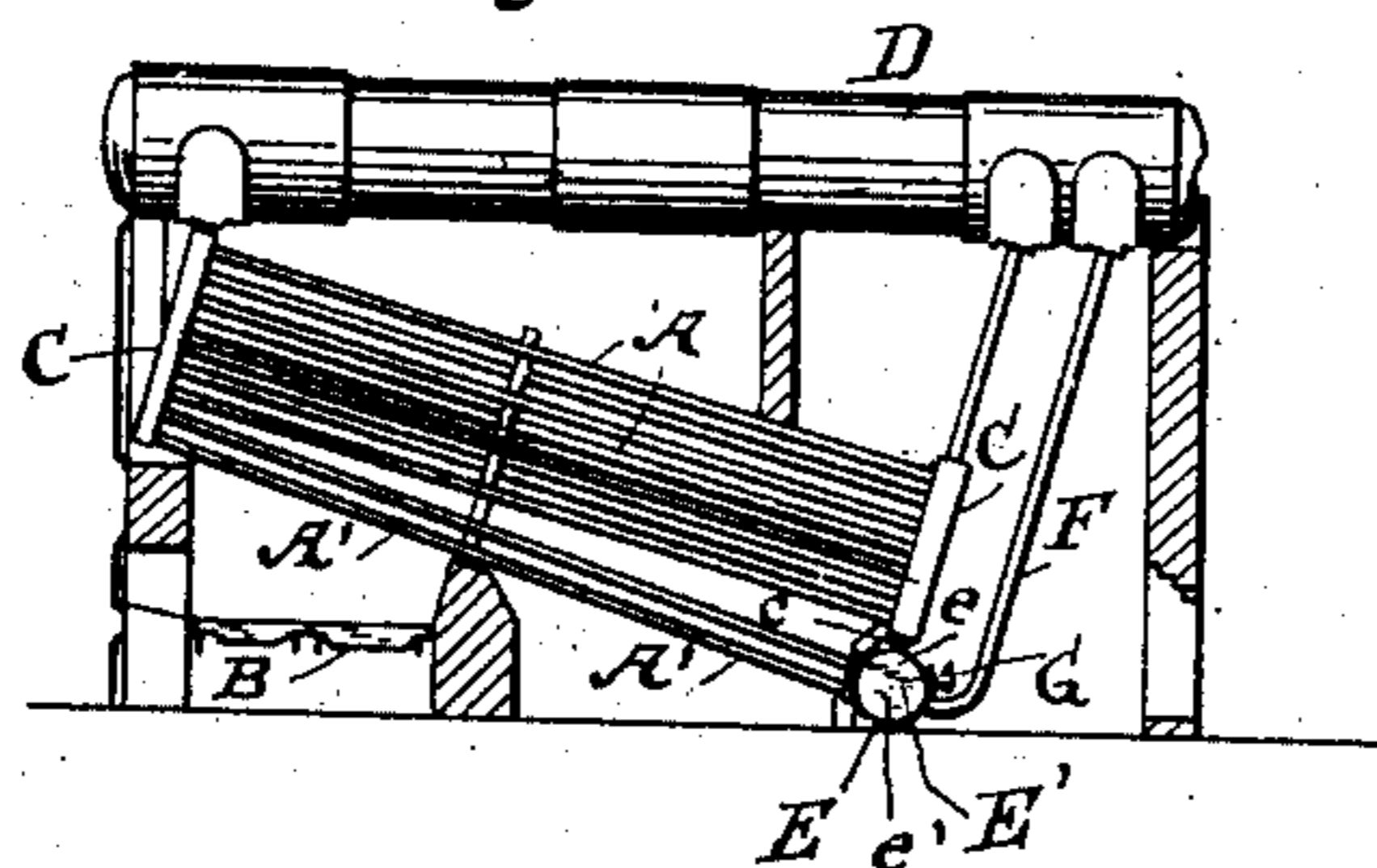


Fig. 4.

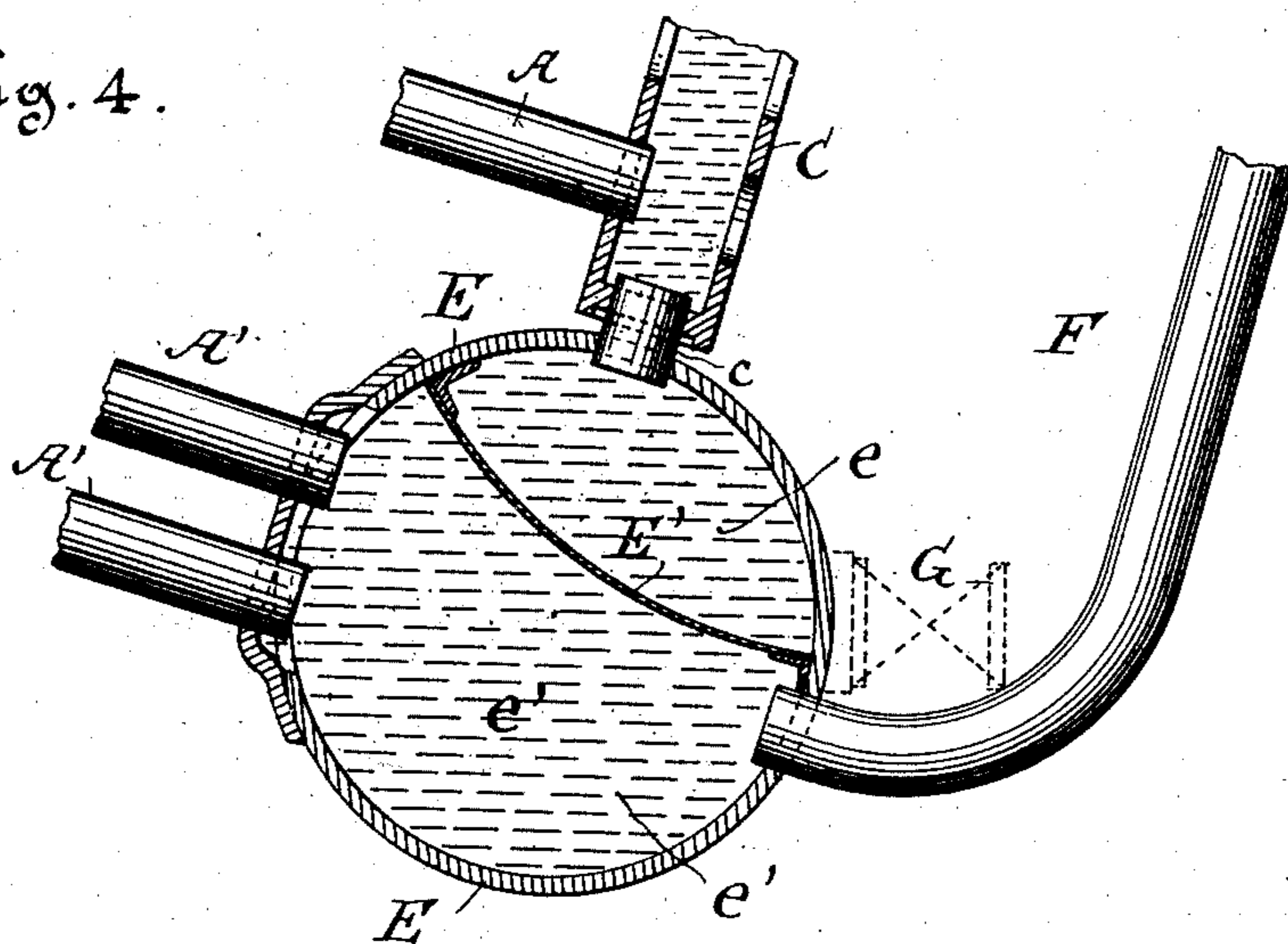
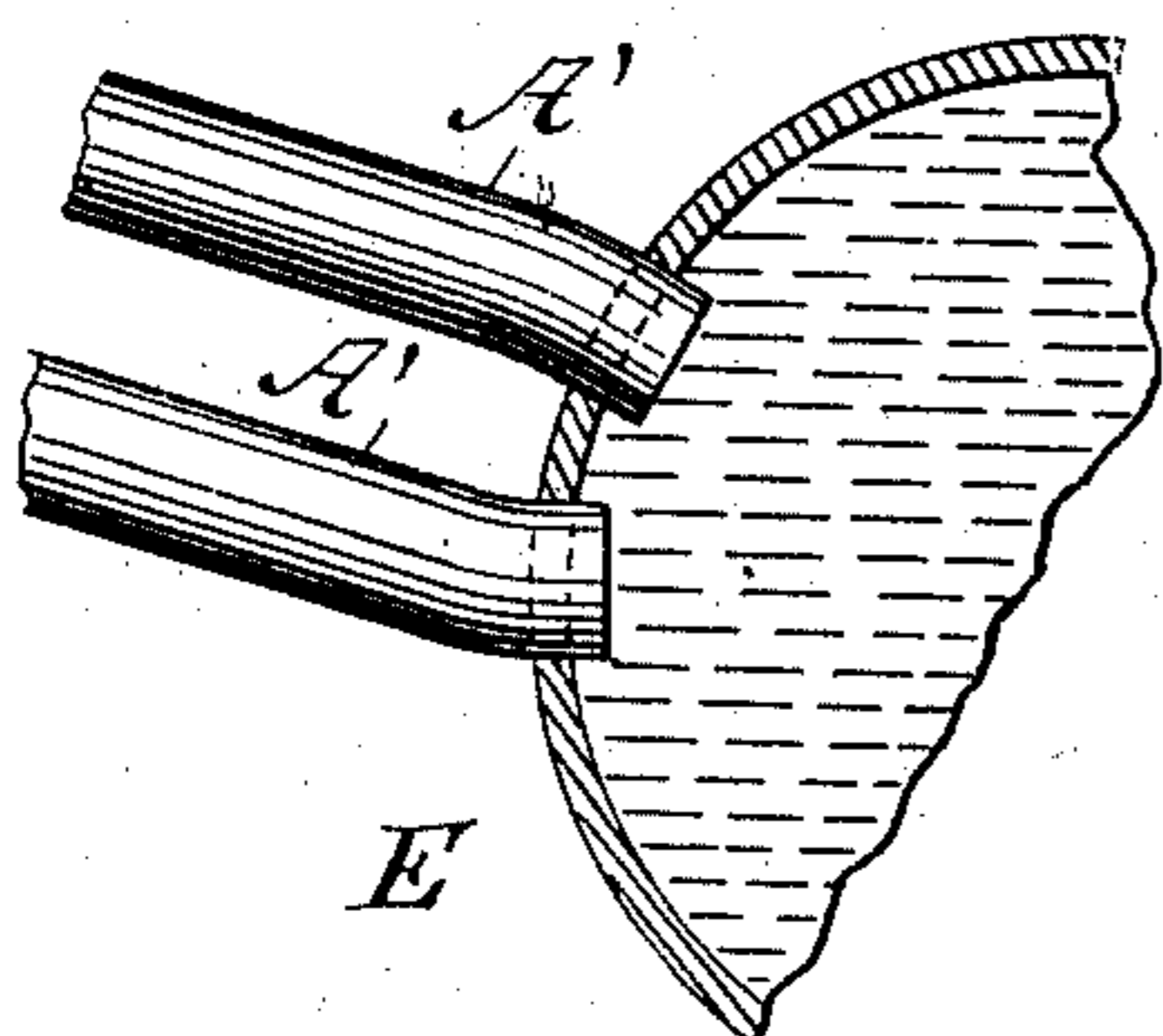


Fig. 5.



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UNITED STATES PATENT OFFICE.

HAROLD W. KOLLE, OF LONDON, ENGLAND.

WATER-TUBE STEAM-GENERATOR.

SPECIFICATION forming part of Letters Patent No. 736,743, dated August 18, 1903.

Application filed December 17, 1902. Serial No. 135,592. (No model.)

To all whom it may concern:

Be it known that I, HAROLD W. KOLLE, a subject of the King of Great Britain, residing at 30 Farringdon street, London, England, have invented certain new and useful Improvements in Water-Tube Steam-Generators, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to water-tube steam-generators of the Babcock and Wilcox type, in which a transverse mud-drum is connected to and beneath the rear headers.

The present invention consists in dividing the mud-drum by suitable partitions into separate chambers and connecting one of said chambers with a separate water-circulating system between the steam and water drum and the front header connection and connecting the other chamber with the rear headers to serve as a mud-receptacle.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation, partly in section, of a generator embodying the invention; Fig. 2, an enlarged cross-section of mud-drum and connections; Fig. 3, a sectional elevation of a modification of the invention; Fig. 4, an enlarged cross-section of a part of Fig. 3, showing the mud-drum with its chambers transposed and connections arranged accordingly; and Fig. 5, a modified way of inserting the lower row of tubes in the drum.

As shown by the drawings, the main rows of inclined water-tubes A, located over the furnace B, are connected to end headers C, which are in turn connected to a main steam and water drum or reservoir D, as in the ordinary construction of Babcock and Wilcox steam-generators as designed for land purposes. A lower or supplementary row or rows of inclined water-tubes A' is or are provided, their forward ends being connected to the front headers of the boiler, while their

rear ends are expanded into or otherwise connected to a mud-drum E, to which are connected downflow-tubes F, leading from the cross-box on the steam and water drum D.

The mud-drum E is divided by a partition E' into two compartments, whereof in Figs. 1 and 2 the lower one *e* and in Figs. 3 and 4 the upper one *e* is connected to the rear headers by nipples *c* to form a receptacle for solid impurities passing down the rear headers, which are periodically blown off through a blow-off pipe furnished with a cock G, while the other compartment, *e'*, serves as a means of communication between the downflow pipes F and the bottom row or rows of water-tubes A'. A separate water-supply of water is thus provided to the tubes A' from the steam and water drum, so that these tubes, which are most fully exposed to the fire-gases, instead of being supplied with water through the lower ends of the vertical headers receive a full and direct supply from the reservoir D.

Having thus fully described my invention, I claim—

A sectional steam-generator of the type described provided with a manifold or drum E located at the bottom of the rear headers C provided with a partition E' forming non-communicating chambers *e e'* therein, a row or group of supplementary water-tubes communicating with one of the chambers of said manifold or drum E and the front headers C'; a series of downflow-pipes F communicating with one chamber and the steam and water drum D and the rear header C communicating with the other chamber of the manifold or drum E.

In testimony whereof I affix my signature in presence of two witnesses.

HAROLD W. KOLLE.

Witnesses:

H. P. SMITH,
R. ACOCK.