

No. 685,280.

Patented Oct. 29, 1901.

C. W. HUNT.  
BOILER FEEDER.

(Application filed Nov. 30, 1900.)

(No Model.)

Fig. 1.

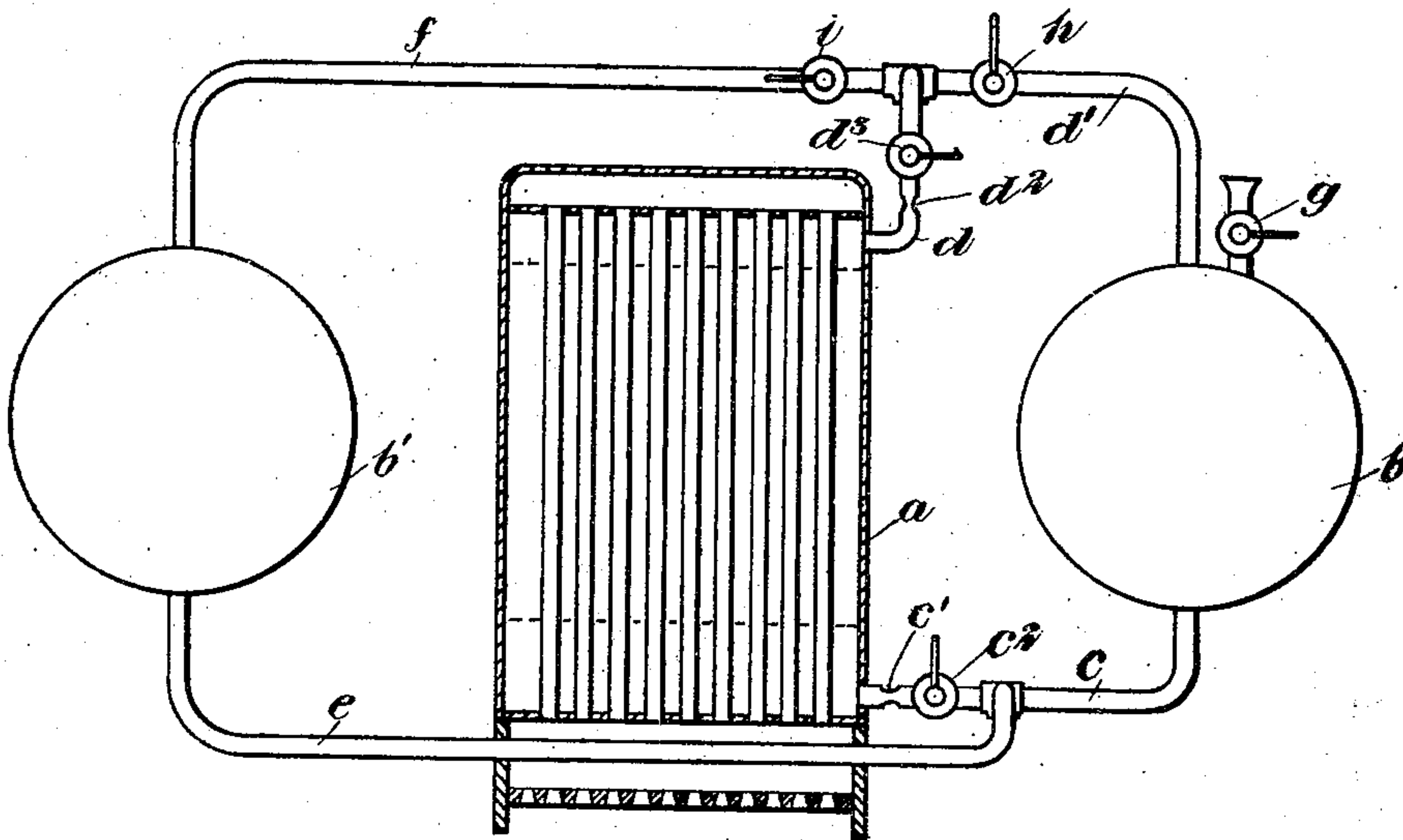
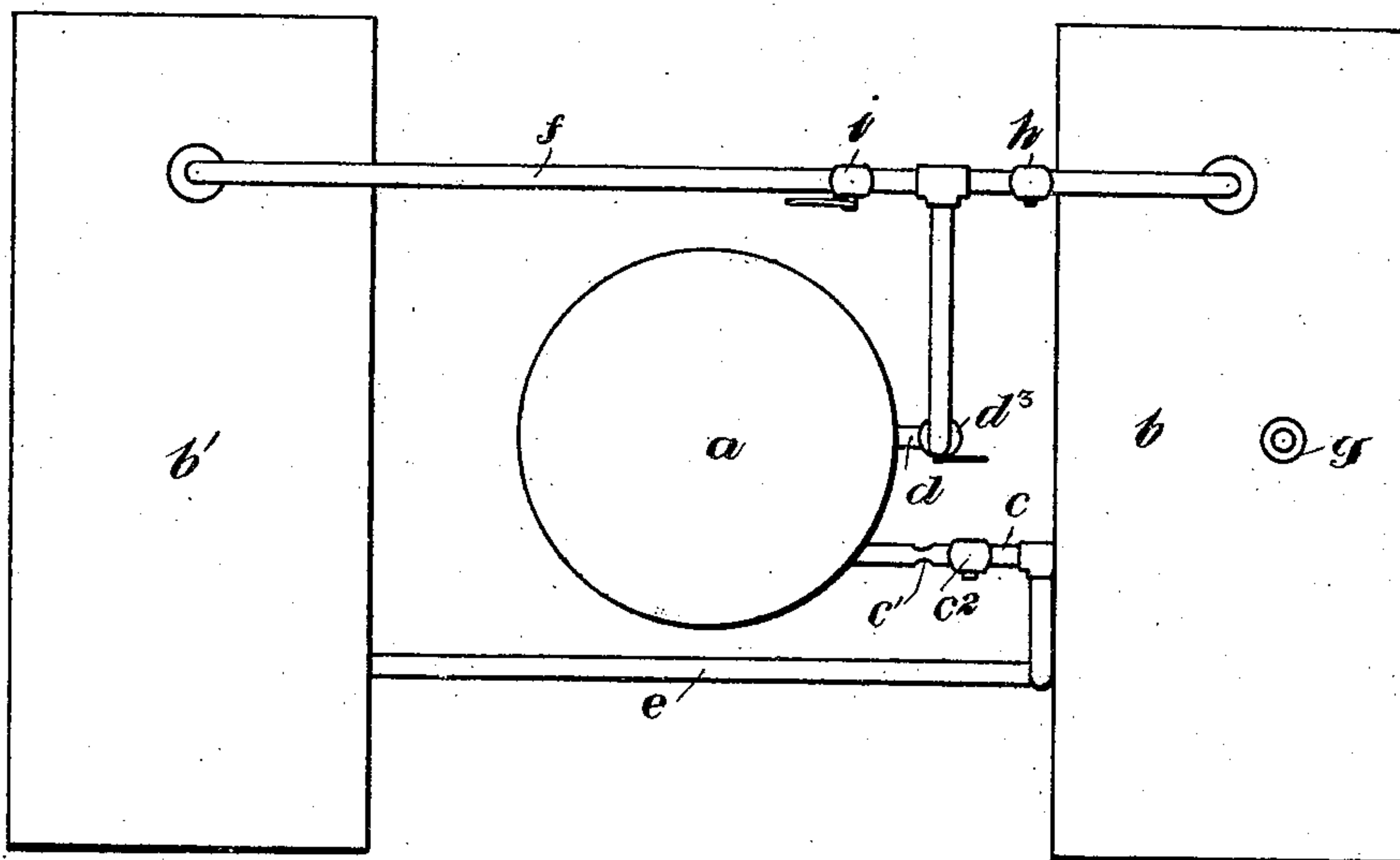


Fig. 2.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## BOILER-FEEDER.

SPECIFICATION forming part of Letters Patent No. 685,280, dated October 29, 1901.

Application filed November 30, 1900. Serial No. 38,088. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES W. HUNT, a citizen of the United States, residing in West New Brighton, borough of Richmond, city of New York, State of New York, have invented certain new and useful Improvements in Boiler-Feeders, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to boilers of that general type in which a comparatively small volume of water is directly subjected to the action of heat for the generation of steam for power purposes, while provision is made for a sufficient supply of water to keep up the generation of steam for the desired time. Boilers of this class are specially applicable to steam-driven motor-vehicles, and it is with reference to such use that the improved boiler to be described herein has been devised, although it may be applied to other uses.

The invention will be more fully explained hereinafter with reference to the accompanying drawings, in which, for purposes of explanation and illustration, one embodiment of the invention is represented.

In said drawings, Figure 1 is a view, partly in vertical section and partly in elevation, showing somewhat diagrammatically one form of boiler to which the invention is applied. Fig. 2 is a plan view of the boiler shown in Fig. 1.

As represented in the drawings, the steam-generating portion or compartment *a* is comparatively small, containing such a volume of water that with a furnace or heater of limited capacity steam will be generated rapidly. A larger volume of water, sufficient to keep up the generation of steam for the desired time, is contained in one or more supply tanks or compartments *b*. Each of such compartments or tanks *b* is connected with the generating-compartment above and below the normal water-level, as by pipes *c* and *d*, so that equilibrium is maintained. As will be understood, water should be supplied to the steam-generating compartment in quantity sufficient to compensate for the maximum normal evaporation of the water in the steam-generating compartment. Any excess is not only unnecessary, but in case of acci-

dents the free escape of the water would be highly undesirable. Accordingly, each pipe *c* and *d*, although uninterrupted, is constricted at a point near the generating-chamber, as at *c'* and *d'*, respectively, so that the area of the pipe in cross-section at such point shall be sufficient to permit the normal maximum flow under ordinary conditions of use. This constriction of the supply and return pipes is not only a safeguard in case of accident, but it retards to some extent the sudden changes of the water-level in the generating-compartment, which are otherwise liable to occur through changes in the position of the vehicle, without preventing the gradual adjustment of level.

For the further purpose of maintaining the water-level in the steam-generating compartment *a* at or about its normal height regardless of the position of the vehicle to which the boiler may be applied it is desirable to provide a second supply compartment or tank on the opposite side of the generating-compartment, the two supply-compartments being connected together, either directly or through a separate connection of each, with the generating-compartment in any convenient manner. As shown in the drawings, the compartment *b'* is connected by a pipe *e* with the pipe *c* and by a pipe *f* with the pipe *d*. In this manner when, for example, the vehicle is in such a position that the compartment *b* is the highest the water which flows therefrom will be received partly in the compartment *b'* and not altogether in the generating-compartment *a*, whereby the fluctuation of the water-level in the steam-generating compartment will not be great under any ordinary conditions of use.

It will be understood that the water can be introduced into the boiler at any convenient point, as by a supply-cock at *g*, stop-cocks being provided at *c'* and *d'* in the pipes *c* and *d*, respectively, so as to cut off the steam-generating compartment from the rest of the boiler while the supply of water is being replenished. The water can be introduced by simply pouring it in through the supply-cock *g* if the exigencies of the situation require it, the pressure in the compartment *b* having been relieved by opening the supply-cock *g* after the cocks *c'* and *d'* are



closed. Other cocks *h* and *i* may be disposed in the pipes *d'* and *f* to further control the movement of water or steam in the boiler, if desired.

5 The invention is not restricted to the particular construction and arrangement of parts shown in the drawings for purposes of explanation, it being understood that the details of construction and arrangement can be varied  
10 without departing from the spirit of the invention.

I claim as my invention—

15 In a boiler the combination of a steam-generating compartment and water-supply compartments located on opposite sides of the steam-generating compartment and con-

nected directly with each other above and below the water-level, and common connections from said supply-compartments to the steam-generating compartment, said common con- 20 nections being constricted at points near the steam-generating compartment to permit only the normal maximum flow of water from the supply-compartments to the steam-generating compartment to compensate for the 25 loss of water by evaporation.

This specification signed and witnessed this 24th day of November, A. D. 1900.

CHARLES W. HUNT.

In presence of—

ANTHONY N. JESBERA,  
LUCIUS E. VARNEY.