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Patented Feb. 4, 1902.

E. F. COX & G. BLASS.

WATER HEATER.

(Application filed Apr. 27, 1901.)

(No Model.)

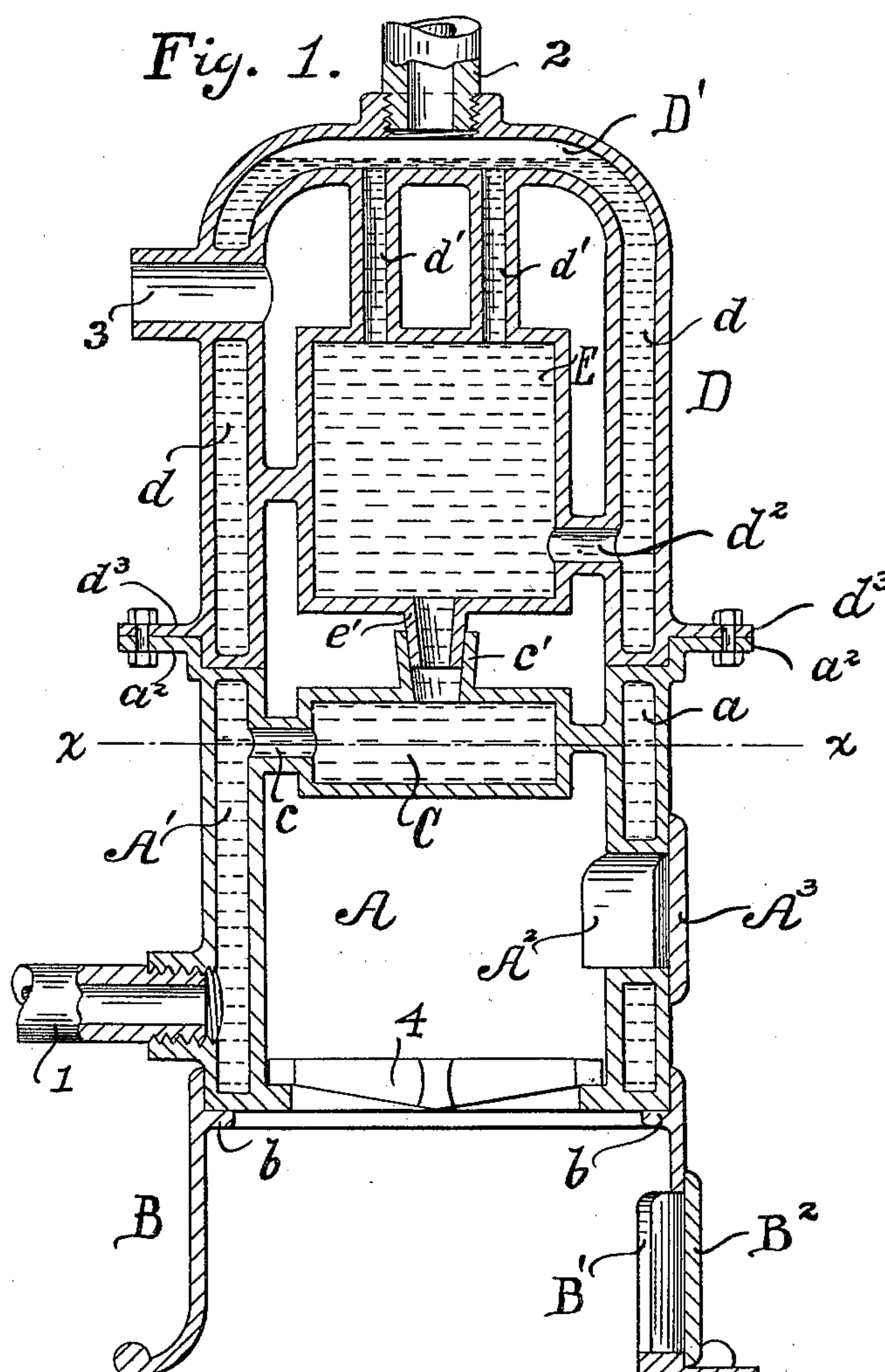
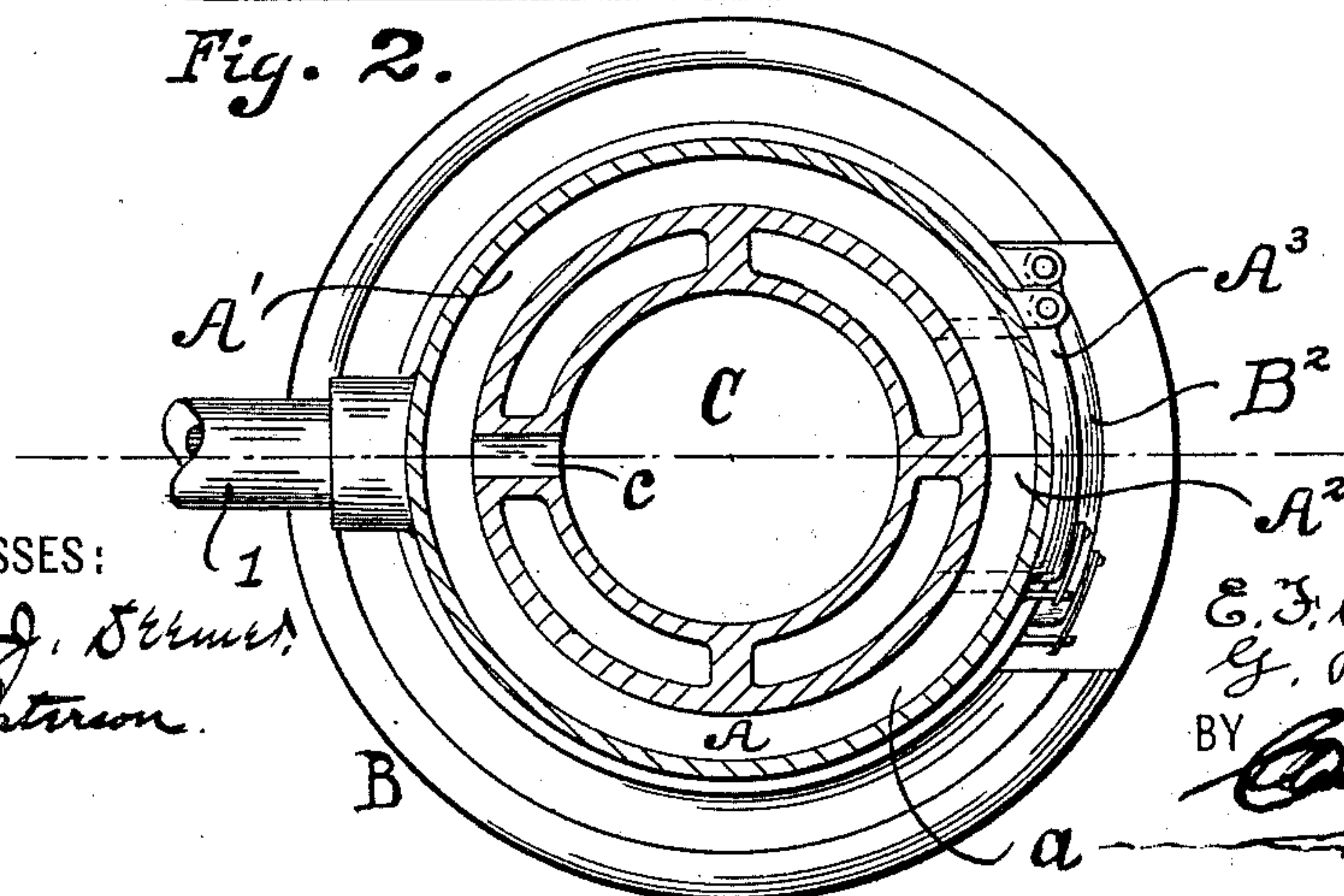


Fig. 2.



WITNESSES:
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UNITED STATES PATENT OFFICE.

EDMOND F. COX AND GUSTAVE BLASS, OF NEW YORK, N. Y.

WATER-HEATER.

SPECIFICATION forming part of Letters Patent No. 692,244, dated February 4, 1902.

Application filed April 27, 1901. Serial No. 57,663. (No model.)

To all whom it may concern:

Be it known that we, EDMOND F. COX and GUSTAVE BLASS, citizens of the United States, and residents of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Water-Heaters, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar characters of reference indicate corresponding parts in both figures.

This invention relates to water-heaters, the object thereof being to provide an improved apparatus of this character which is adapted for direct connection with the water-main to supply a continuous flow of hot water to a building.

The device is simple in construction, durable, and inexpensive, and it comprises detachable sections capable of being readily disconnected for transportation.

The invention will be hereinafter fully described, and specifically set forth in the annexed claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a vertical sectional elevation of our improved heater, and Fig. 2 is a sectional plan view taken on the line $x x$ of Fig. 1.

In the practice of our invention, as illustrated in the drawings, A represents a cylindrical fire-box, which is surrounded by a water-jacket A'. This jacket is closed at top and bottom, whereby an annular reservoir a is formed. The fire-box and its water-jacket are in telescopic connection with a cylindrical ash-pit, and the box A rests upon an interior annular flange b , formed integrally with said ash-pit. A doorway B leads into the said ash-pit for the purpose of removing ashes and supplying draft to the fire-box. This doorway is normally closed by means of a suitable door B². A doorway A² also leads into the fire-box A for supplying fuel to the device, and this doorway is normally closed by the door A³.

Located within the fire-box A, near the top thereof, is a drum C, which communicates with the reservoir a by means of the channel c .

In telescopic connection with the water-jacket A' is an auxiliary compartment D,

which embodies an annular reservoir d and forms part of the hollow dome D' to provide a large area for containing the water to be heated. Suitably connected within this compartment D is a cylindrical drum E, which communicates with the dome D' by means of the tubes d' and with the reservoir d through the channel d^2 . This drum E has a tapering tubular extension e' leading from its bottom portion, which telescopes with a similar extension c' of the drum C to allow of free circulation of the water between the two drums. The compartment D is provided with a flange d^3 , which engages a similar flange a^2 of the compartment A, and the two flanges are bolted together when the structure is set up to keep the parts in secure engagement with each other.

A water-supply pipe is tapped into the water-jacket A' near the bottom thereof for supplying a continuous flow of water to the structure, and an outlet-pipe 2 is tapped into the outer wall of the dome D' for discharging the water. The pipe 1 is led directly from the water-main or source of supply, and the pipe 2 communicates with the system for supplying the house.

For discharging the particles of combustion from the fire-box a flue 3 is led through the walls of the compartment D for connection with a chimney or other outlet.

A suitable grate, as 4, is placed within the lower end of the fire-box for containing the fuel, and the particles of combustion circulate freely within the two compartments and around the drums, whereby all the water is constantly maintained in a heated condition.

In the operation and use of the invention water is let into the device from the main through the pipe 1, and it is allowed to circulate freely within the reservoirs a and d and the drums C and E, discharging through the pipe 2 to the house system. A fire is then built upon the grate 4, and the heat and particles of combustion continuously circulating within the two compartments and around the drums causes all the water contained within the device to be maintained in a constantly-heated condition, thus providing an efficient means for supplying hot water to the house system.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

5 In a water-heater, the combination, with the fire-box A; the water-jacket A', surrounding said fire-box; the door A³, leading by the entry A², into said fire-box; the entry-pipe 1, adapted and arranged to supply said jacket with water; the grate 4, in the bottom of said
10 fire-box; the ash-pit B, telescopically attached to said water-jacket; the drum C, within said fire-box; and the channel c connecting said drum with said jacket; of the auxiliary compartment D, telescopic con-
15 nections attaching said auxiliary compartment and said water-jacket; the reservoir d, surrounding said compartment D; the drum E, within said compartment; the tubes d',

connecting said drum E, with the reservoir d; telescopic extensions e', and c', connecting 20 the drum E, with the drum C, flanges d³, and a², adapted and arranged to be fastened together, and to hold the parts of the structure in position; means for the escape of the products of combustion; and means for the edu- 25 cation of hot water from said heater, all substantially as and for the purpose set forth.

In testimony that we claim the foregoing as our invention we have signed our names, in the presence of two witnesses, this 19th day of 30 April, 1901.

EDMOND F. COX.
GUSTAVE BLASS.

Witnesses:

BELLE PATERSON,
S. HARNISCH.