

No. 878,356.

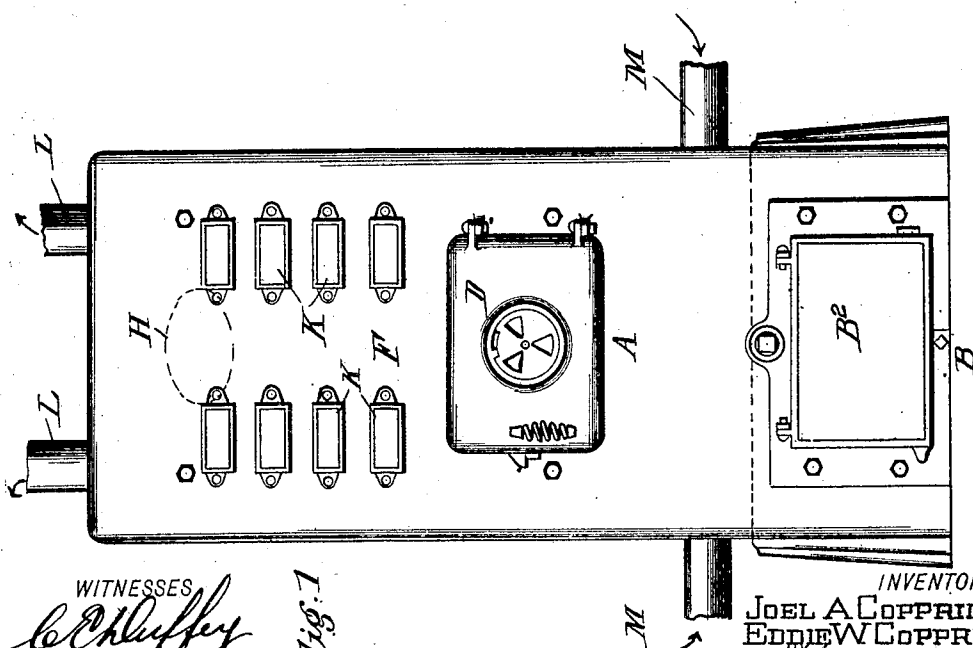
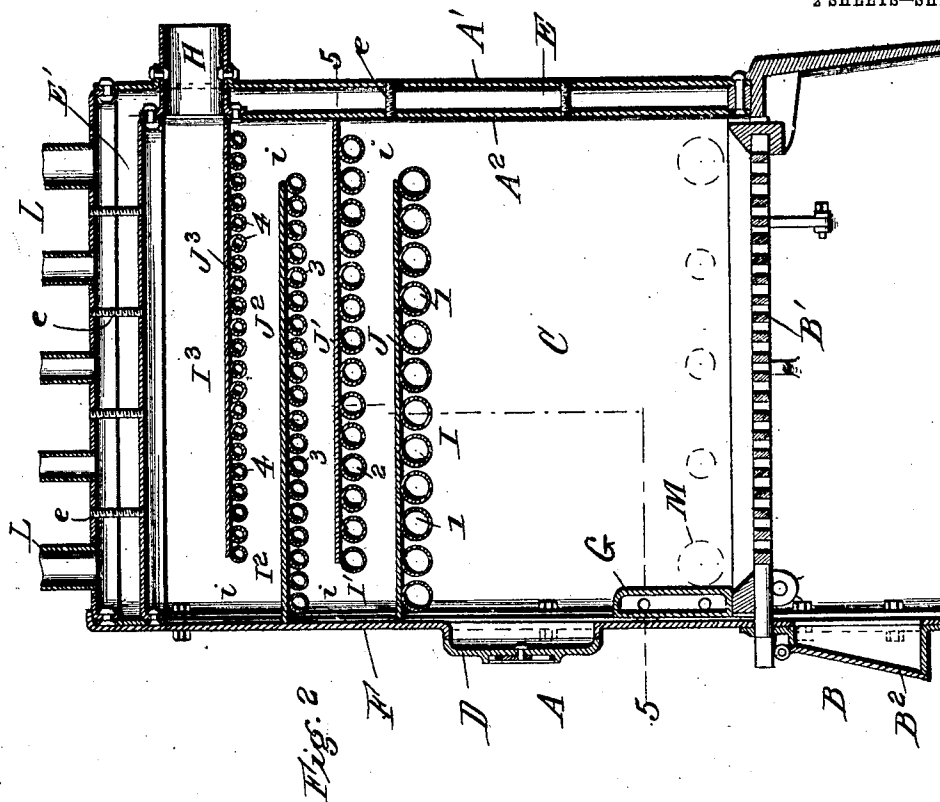
PATENTED FEB. 4, 1908.

J. A. & E. W. COPPRIDGE.

HOT WATER HEATER.

APPLICATION FILED MAR. 5, 1907.

2 SHEETS—SHEET 1.



WITNESSES
C. Chaffey
Perry B. Surpin

Fig. 1

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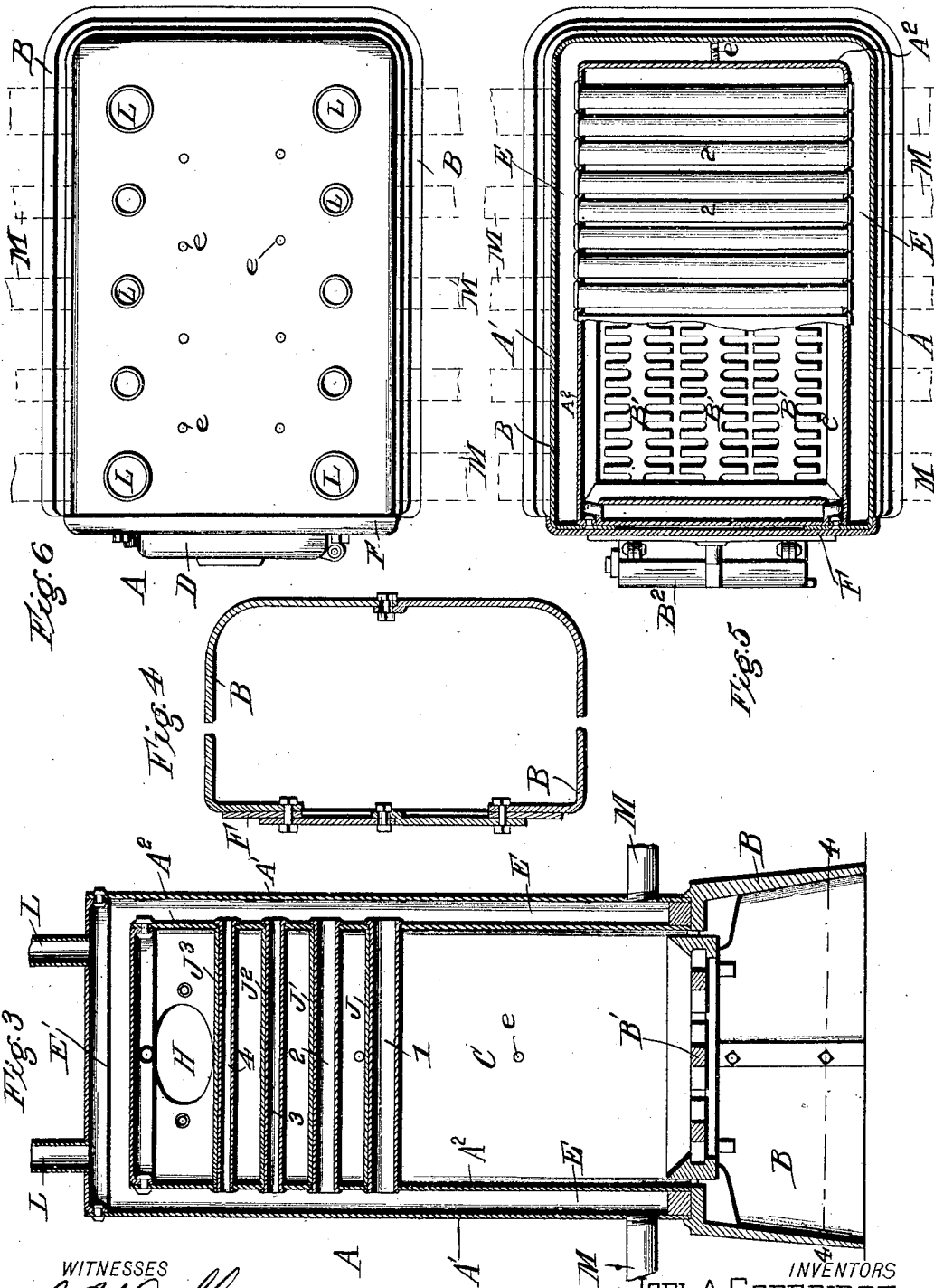
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

JOEL ANDERSON COPPRIDGE AND EDDIE WELLMER COPPRIDGE, OF RICHMOND, VIRGINIA.

HOT-WATER HEATER.

No. 878,356.

Specification of Letters Patent.

Patented Feb. 4, 1908.

Application filed March 5, 1907. Serial No. 360,693.

To all whom it may concern:

Be it known that we, JOEL A. and EDDIE W. COPPRIDGE, citizens of the United States, and residents of Richmond, in the county of Henrico and State of Virginia, have invented an Improvement in Hot-Water Heaters, of which the following is a specification.

This invention is an improvement in hot water heaters, and consists in certain novel constructions and combinations of parts as will be hereinafter described and claimed.

In the drawings, Figure 1 is a front view, and Fig. 2 is a vertical longitudinal section of a heater embodying my invention. Fig. 3 is a vertical cross section thereof. Fig. 4 is a horizontal section of the body below the baffle partitions. Fig. 5 is a cross section on about the line 5—5 of Fig. 2; and Fig. 6 is a top plan view of the heater.

The heater comprises a body A mounted on a suitable base B and having a fire pot C to which access may be had through a door D. The base B may preferably be cast and the body A be of wrought iron or steel with the outer casing A¹ and the inner casing A², the latter extending along both sides and the back of the body and being spaced away from the outer casing A¹ forming a water space or chamber E extending around three sides of the body, and extended at E¹ to form a water space above the fire pot C, any suitable means, such as stay bolts *e* shown, being provided for holding the parts A¹ and A² properly spaced apart. The base B affords an ash box below the grate B¹, a suitable ash door B² being provided, and along the inner side of the front F of the box A I provide below the door D a water back G which may be suitably connected with the water supply and with the water pipe system of the house to supply hot water to the house being heated. A suitable outlet H is provided for the products of combustion, such outlet being located at the top of the fire box C, as best shown in Fig. 2, and preferably consisting of a pipe riveted in connection with the parts A¹ and A², as shown in Fig. 2.

Within the fire box and below the discharge outlet, I provide a series of baffle partitions I, I¹, I² and I³. These partitions are alike in construction, except as to proportions, as presently described, and they project alternately from the opposite ends of the body over the fire pot, and nearly to the opposite end of the body, affording con-

tracted passages *i* between the free ends of the partitions and the adjacent walls of the body. The lower partition projects from the front wall of the body toward the rear wall, and the upper partition projects from the rear wall immediately below the discharge H toward the front wall of the body, and the intervening partitions alternate as best shown in Fig. 2. These partitions comprise a plurality of series of tubes 1, 2, 3 and 4, extending from side to side of the body and communicating at their opposite ends with the water space E, being suitably connected with the inner casing plates A², as shown in Fig. 3, and plates J, J¹, J² and J³, overlying their respective tubes 1, 2, 3 and 4, as shown in Figs. 2 and 3. The tubes of each series are preferably of uniform diameter, and the tubes of the several series decrease in diameter toward the top of the fire box. In other words, the tubes of each of the series are smaller than those of the next lower series, so that as the heat passes upwardly around the several partitions, and decreases in intensity, the area of the water to be heated will also decrease, this being best illustrated in Figs. 2 and 3 of the drawings.

For cleaning out the spaces between the several partitions, I provide at the front of the body A, doors K arranged in two vertical series, adjacent to the opposite sides of the heater, so a scraper or other suitable implement may be inserted to the spaces above the partitions for cleaning out the soot and other material accumulating thereon. It will be noticed that the material may be scraped from the upper partition on to the next lower, thence to the next lower, thence to the lower partition, and thence into the fire pot.

Pipes L lead from the top of the hot water space E to the radiators, and return pipes M from the radiators open into the space E at the bottom thereof. It will be noticed that these pipes L and M are arranged in series and correspond, and that when one or more of the feed pipes L are not in use, the corresponding pipe or pipes M may be plugged, thus equalizing the circulation in the use of the heater as is desirable.

We claim:

A hot water heater comprising a body and a fire pot therein, the body having a water space, or chamber extending around three sides thereof and having the other side of the body provided with a door above the fire

pot and the said side being provided below
such door with a water back forming one side
of the fire pot and connected with the main
water space or chamber of the body, a series
5 of alternating baffle partitions extending
within the body from side to side thereof and
terminating alternately at points spaced
away from the walls of the body, said parti-
tions comprising a series of tubes and plates
10 overlying the same, the tubes of the several

series being smaller than those of the next
lower series and the tubes of the several
series connecting independently with the
water space of the body, substantially as and
for the purpose set forth.

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Witnesses:

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ABNER C. GOOD.