(No Model.)

J. PELLOW.

COMBINED WATER HEATER AND SHOWER BATH.

No. 489,660. Patented Jan. 10, 1893.

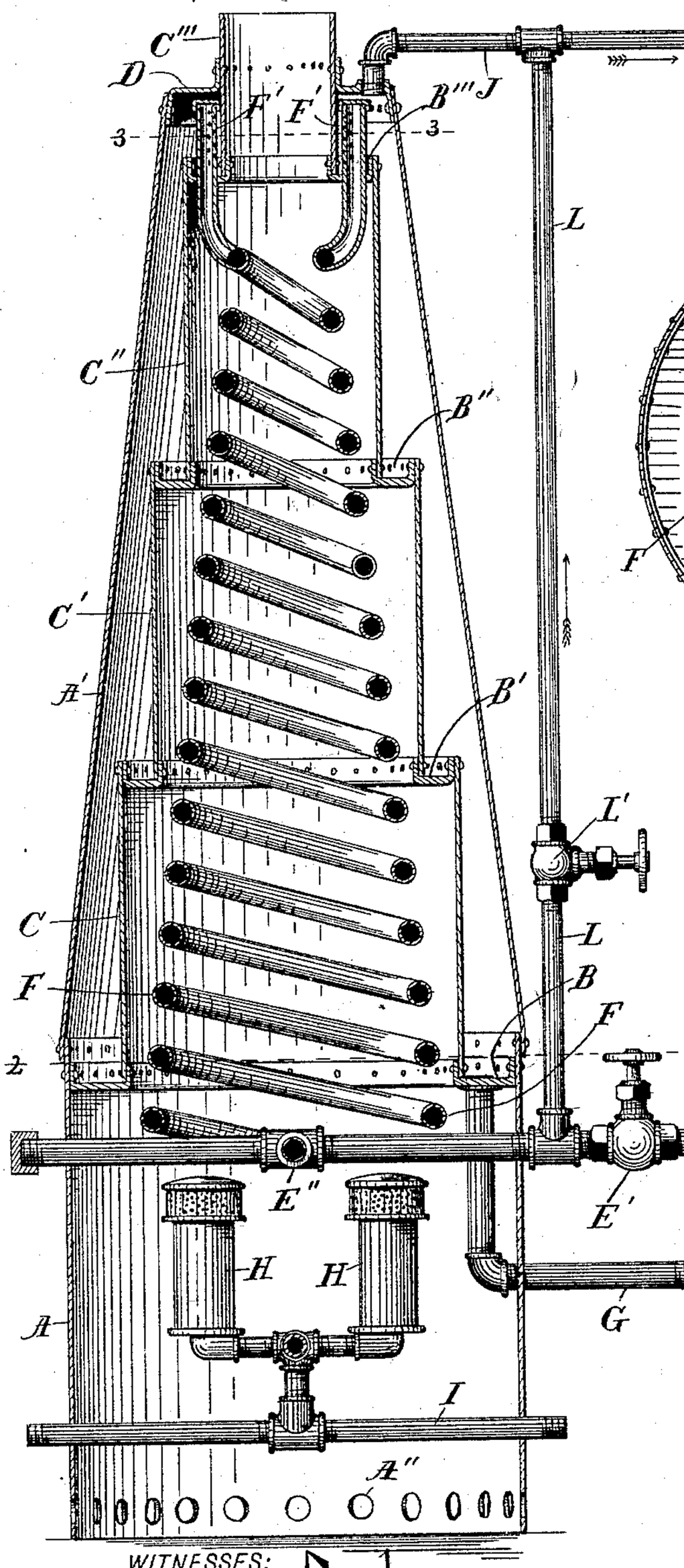

Fig. 1.

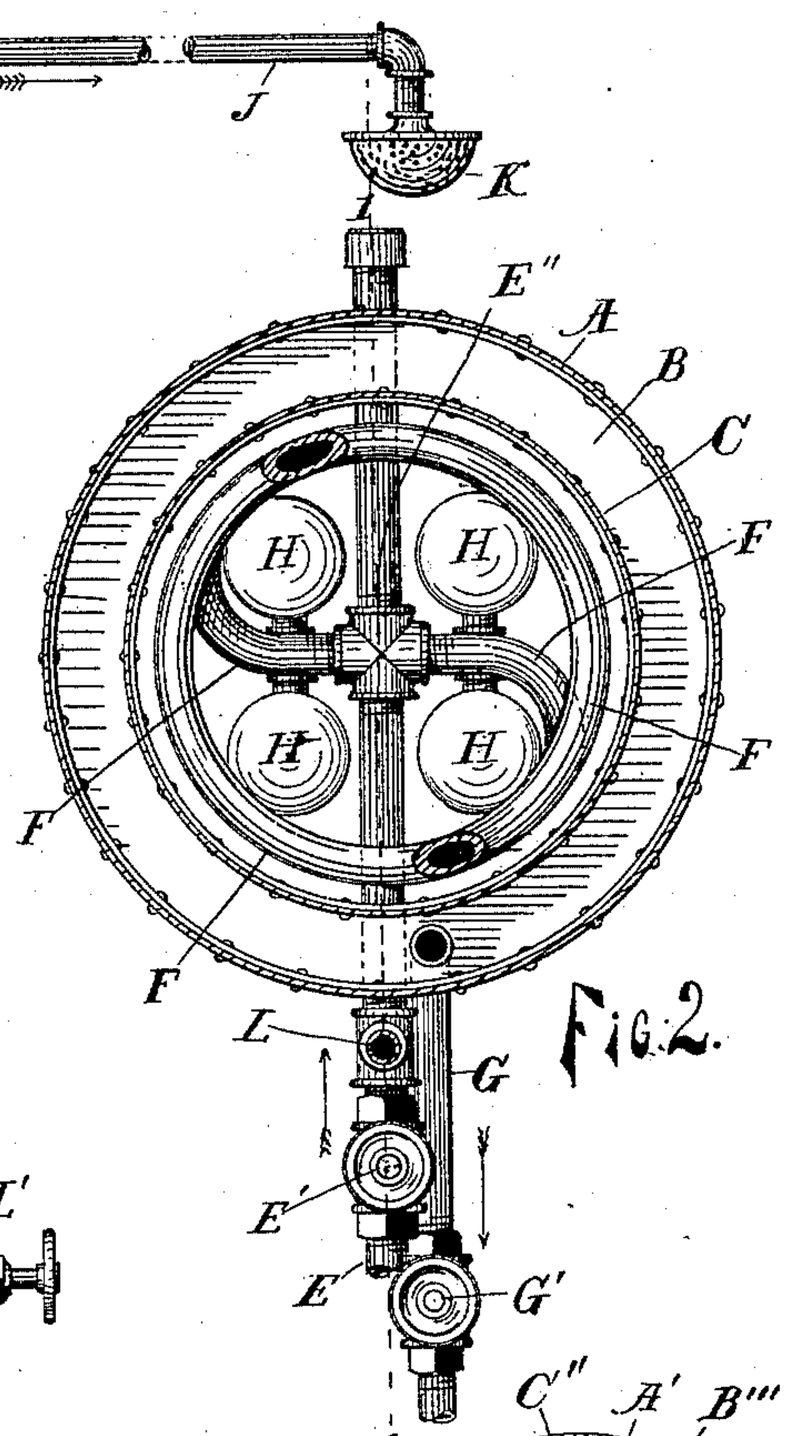

Fig. 2.

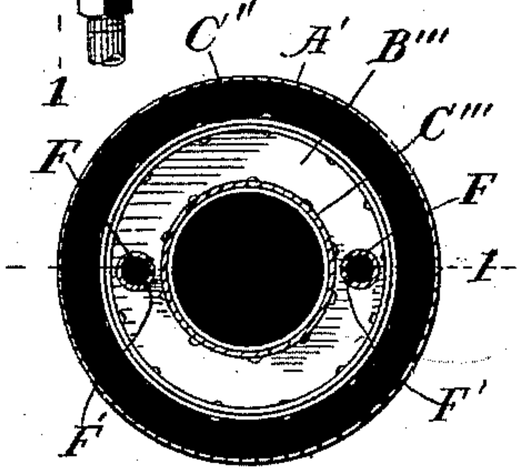

Fig. 3.

WITNESSES:

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JOHN PELLOW, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR OF ONE-HALF TO GEORGE B. WILSON, OF SAME PLACE.

COMBINED WATER-HEATER AND SHOWER-BATH.

SPECIFICATION forming part of Letters Patent No. 489,660, dated January 10, 1893.

Application filed July 14, 1892. Serial No. 440,068. (No model.)

To all whom it may concern:

Be it known that I, JOHN PELLOW, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in a Combined Water-Heater and Shower-Bath; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in a combined water heater and shower bath, and its object is to provide the same with certain new and useful features, hereinafter more fully described and particularly pointed out in the claims, reference being had to the accompanying drawings in which;

Figure 1 is a vertical section of a device embodying my invention on the line 1—1 of Figs. 2 and 3. Fig. 2 a horizontal section of the same on the line 2—2 of Fig. 1; and, Fig. 3 the same on the line 3—3 of Fig. 1.

A represents a cylindrical casing, within which are located burners H for gas, gasoline, or other fuel, which burners are supplied through the pipe I. Attached to the upper part of the base A, is a truncated conical extension A′ terminating at its upper end in an annular head D, said head surrounding and attached to the smallest tubular section C‴, which section extends above said head, to connect with a smoke pipe and also extends below the same a short distance, terminating in an annular cup B‴ surrounding its base, to the outer rim of which cup is attached a larger tubular section C″, which also has attached another larger annular cup B″, to the outer rim of which is attached the upper end of another still larger tubular section C′, which has another annular cup B′ at the bottom, to which is attached the upper end of another tubular section C, which also has an annular cup at the bottom, the outer rim of which is attached to the base A near its upper end, thus making a series of upwardly decreasing tubular sections C C′ C″ C‴ in series one above the other, connected at their adjacent ends by upwardly open annular cups B B′ B″ B‴, which form the inner walls and bottom of a water chamber, the outer wall and head being formed by the conical extension A′ and the annular head D. Opening in to the top of this chamber, is a pipe J having no valve or other means of closing the same, which pipe extends upward and to any convenient point where it terminates in a sprinkler K, for the purpose of a shower bath; and from the lower part of said chamber extends a pipe G provided with a valve G′, which extends to any convenient point to discharge hot water from said chamber.

E is a pipe connected to any convenient water reservoir, or hydrant, which pipe is provided with a valve E′, and extending through the casing A above the burners H, is provided with a cross E″, to which are connected the conical spiral pipe coils F F which extend upward within the described tubular sections and cups, and passing vertically through the upper cup B‴, are closed at their upper ends and perforated with a number of openings F′ on their sides adjacent to the upper tubular section C‴. Extending from the supply pipe E to the shower bath pipe J and connecting the same is a pipe L provided with a valve L′. The burners H serve to heat the coils F F, tubular sections C C′ C″ C‴ and the cups B B′ B″ B‴, which collectively present a large and efficient heating surface, water being turned on by opening the valve E′, will flow through the pipe E and coils F F and escaping at the openings F′ is sprayed upon the section C‴, and running downward on the outer surface of the same, accumulates in the cup B‴, whence it over flows and passing downward over the successive sections C″ C′ C and through the cups B″ and B′ finally accummlates in the lower cup B, whence it passes off at the pipe G when the valve G″ is open. These cups B′ B″ B‴ are found to be very effective for strengthening the structure against pressure of water from without and also for deflecting and breaking up the upward current of heated air and gases, and also increasing the heating surface of the device.

By closing the valve G′ the water will fill the device and then overflow at the pipe J, escaping in a spray of hot water at the sprinkler K; should said water be too hot, a portion of cold water may be added by opening the

valve L′, more or less, the resistance due to the convolutions of the coils F and the narrowness of the openings F′, causing a portion of the water to take the free course through the pipe L, according as the valve L′ is opened more or less. In case both valve G′ and E′ are inadvertently closed no over pressure can be produced to explode the device, as all excess of pressure at once escapes through the pipe J and sprinkler K. Nor is it possible to put full hydrant pressure upon the device, as all excess of pressure over what is necessary to drive the water over, escapes through said pipe J and sprinkler K, which should be large enough to pass freely all the water that can be admitted through the valve E′.

The structure can thus be made thin and light, which facilitates rapid heating, and is also cheaper and at the same time is insured against any accident from over pressure, which in case of a device that can be wholly closed and steam generated in the same, can be exploded, regardless of its strength, and is therefore very dangerous.

What I claim is;—

1. In a water heater, the combination with the tubular sections of different diameters, cups at the ends of said sections, and the casing surrounding said sections and cups, of the spiral coils extending upwardly through the lower of said sections and having their upper ends located adjacent to the exterior of the upper of said sections and formed with lateral openings, substantially as shown and described.

2. In a water heater, a series of diminishing tubular sections connected by annular cups, and a truncated conical casing connected to one of said cups at its base, and to one of said tubular sections at its opposite end, and a conical spiral coil within said sections and cups connected to a water supply at one end, and passing through the upper cup at the opposite end, and having a series of openings in the side adjacent to one of said tubular sections, substantially as described.

3. In a water heater, a cylindrical casing, having burners or other heating devices within the same, a tubular conical extension attached to said base, a series of upwardly diminishing tubular sections connected by upwardly open annular cups within said conical extension, a head connecting said extension to the upper tubular section, a transverse pipe in said casing above said heaters, conical spiral coils connected to said pipe and extending upward within said tubular section and cups, said coils passing through the upper cup and having lateral openings in the side adjacent to the upper tubular section, and a discharge pipe attached to the lower annular cup, substantially as described.

4. The combination, in a combined water heater and shower bath, of a casing, tubular sections of different diameters located in said casing, cups at the ends of said sections, the burners, spiral coils extending upward within said tubular sections and having their upper ends located adjacent to the exterior surface of the uppermost section and formed with lateral openings, a permanently-open pipe, J, extending from the upper end of said casing and provided at its outer end with a sprinkler, a valved pipe G extending from the lower cup, a valved pipe E connected with the lower ends of said coils, and a valved pipe L connecting said pipes J and E.

5. A combined water heater and shower bath, consisting of a series of upwardly diminishing tubular sections, annular cups connecting the adjacent ends of the same, a truncated conical outer shell connected to the outer rim of the lower cup at its base and to the upper tubular section at its smaller end, burners in said casing conical spiral coils within said sections and cups, said spiral coils extending through the uppermost cup and having series of openings in their sides adjacent to the uppermost tubular section, a permanently-open pipe, J, extending from the upper end of said casing and provided at its outer end with a sprinkler, a valved pipe G extending from the lower cup, a valved pipe E connected with the lower ends of said coils, and a valved pipe L connecting said pipes J and E.

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

JOHN PELLOW.

Witnesses:
LUTHER V. MOULTON,
LOIS MOULTON.