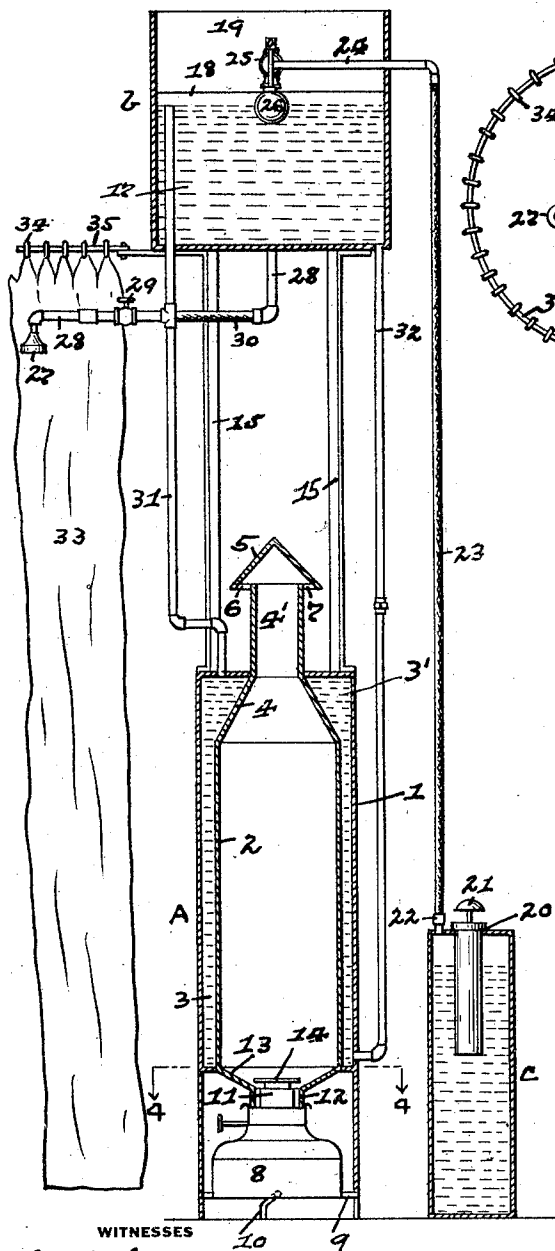


S. BUKA.
 COMBINED WATER HEATER AND SHOWER BATH.
 APPLICATION FILED SEPT. 2, 1919. RENEWED FEB. 5, 1921.

1,372,598.

Patented Mar. 22, 1921.

FIG. 1.



WITNESSES

J. Herbert Bradley.
 Louis Weinman.

FIG. 2.

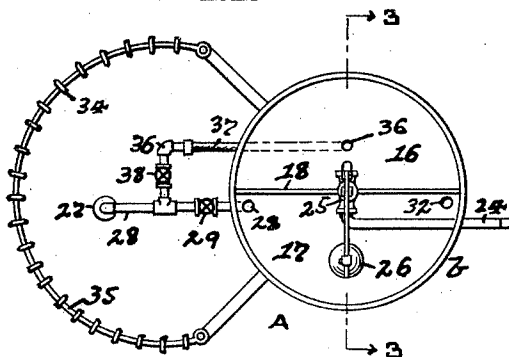


FIG. 3.

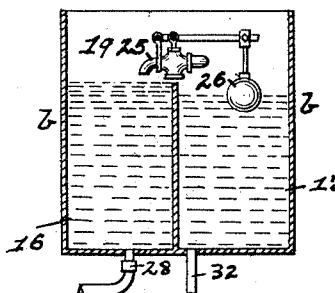
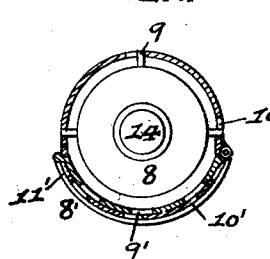


FIG. 4.



INVENTOR

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UNITED STATES PATENT OFFICE.

SIMEON BUKA, OF HUNTINGTON, WEST VIRGINIA.

COMBINED WATER-HEATER AND SHOWER-BATH.

1,372,598.

Specification of Letters Patent.

Patented Mar. 22, 1921.

Application filed September 2, 1919, Serial No. 321,030. Renewed February 5, 1921. Serial No. 442,886.

To all whom it may concern:

Be it known that I, SIMEON BUKA, a citizen of the United States, and a resident of Huntington, in the county of Cabel and State of West Virginia, have invented a new and useful Improvement in Combined Water-Heaters and Shower-Baths; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to a combined water heater and shower bath, and has special reference to a portable device for such purposes.

The object of my invention is to provide a cheap, simple and efficient device which can be used as a unit for a combined water heater and shower bath and thus provide for furnishing water and a shower bath of any temperature for buildings, houses, and places not equipped with a community water distribution system.

A further object of the invention is to provide such a combined water heater and shower bath in which oil, gas, coal, or wood can be used conveniently in connection with a water system, as well as a unit which can be portable, so that it can be moved from one location to another.

A still further object of the invention is to provide such a combined water heater and shower bath unit which will heat the room or place in which the device is located, and at the same time the water for use is being heated.

To these ends, my invention consists, generally stated, in the novel arrangement, construction and combination of parts, as hereinafter more specifically set forth and described, and particularly pointed out in the claims.

To enable others skilled in the art to which my invention appertains to construct and use my improved combined water heater and shower bath, I will describe the same more fully, referring to the accompanying drawings, in which:—

Figure 1 is a vertical section of my improved combined water heater and shower bath;

Fig. 2 is a top view of the same;

Fig. 3 is a cross section taken on the line 3—3, Fig. 2, and looking in the direction of the arrows; and

Fig. 4 is a cross section taken on the line 4—4, Fig. 1, and looking in the direction of the arrows.

Like symbols of reference herein indicate like parts in each of the figures of the drawings.

As illustrated, my improved combined water heater and shower bath is shown at A and is preferably formed of sheet metal, having a water heater *a*, circulating reservoir or tank *b*, and pressure reservoir or tank *c*.

The water heater *a* comprises an outer shell 1 and an inner shell 2 having a water space 3 between the same, such outer shell being closed at its upper and lower ends against such inner shell to form said space, and such inner shell being provided with a conical upper end 4 in order to enlarge such space at such end, as at 3', for containing the highly heated water. The inner shell 2 projects through the upper end of the outer shell by a contracted portion 4' from said conical end 4, and is covered with a hood or top 5 over the same, which is provided with openings 6 in its connections 7 with said shell to allow the products of combustion in said inner shell, as hereinafter described, to escape therefrom into the atmosphere or into the room in which the device A is located, to assist in heating the same, as desired.

At the lower end of the device A and within outer shell 1 is an oil lamp 8, preferably of the central draft type, which is removably supported within such shell by means of ears 9 on said lamp fitting within angular shaped slots 10 in said shell to form a bayonet joint, and the burner 11 of such lamp is positioned within the contracted portion 12 at the lower end of the inner shell 2 and beyond a conical portion 13 on said shell, in order to allow the flame spreader 14 on such lamp to direct the flame from such lamp against said conical portion. A door 8' is hung over one side of the shell 1 opposite the lamp 8 and is provided with openings 9' which are adapted to register with openings 10' in a damper 11' on said door for supplying air to said lamp.

Mounted above the water heater *a* is the circulating reservoir or tank *b*, which is supported by the structural frame rods 15 connected to and between said heater *a* and tank *b*, and such tank is divided into two compartments 16 and 17 for cold and hot water, respectively, by means of a vertical partition 18 in said tank and extending part

way of said tank in order to form the space or compartment 19 above the same and compartments 16 and 17.

At one side of the heater *a* is the pressure reservoir or tank *c*, which is provided with an opening 20 in the top of the same for admitting an air pump 21 into said tank and for filling the tank with water, and such top is provided with a connection 22 to which a hose 23 is connected, which is also connected to a pipe 24 leading into the compartment 16 in the tank *b*. A lever valve 25 operated by a float 26 in the hot water compartment 17 in the tank *b* is located in the pipe 24, and is controlled by the level of the water in said compartment.

The shower spray 27 is at one side of the tank *b* and under the same, being connected with the hot water compartment 17 in such tank by means of a pipe 28 leading from the bottom of such tank, and which is provided with a valve 29 in the same. A hose portion 30 is placed in such pipe 28, and a hot water circulating pipe 31 leads from the hot water space 3' at the upper end of the heater *a*, through the bottom of the tank *b* and hot water compartment 17 to within a short distance from the top of the partition 18, for delivering the heated water to the tank *b* or shower 27. A cold water circulating pipe 32 leads from the bottom of the hot water compartment 17 in the tank *b* to the bottom of the space 3 in the heater *a*, and delivers the heavier cold water from the said compartment to such space to be heated.

The usual splash curtain or covering 33 is placed around the shower spray 27, and it is suspended by means of the usual rings 34 from a rod 35 supported from the tank *b*.

The use and operation of my improved combined water heater and shower bath *A* is as follows. The spaces 3 and 3' in the heater *a*, compartments 16 and 17 in the tank *b* and tank *c* are filled with the cold water, and a slight pressure on the water in such tank *c* is obtained by using the air pump 21. After these parts are so filled with the cold water, the lamp 8 is lit and the products of combustion therefrom will pass up through the inner shell 2 and out through the openings 7 in the cowl 5 at the top of the contracted portion 4' on said shell, thereby creating a draft through said shell. Natural circulation will thus be started immediately by the heating of the water in the spaces 3 and 3' and in the passing of the same through the heater *a*, so that the rising warm water is carried to the tank *b* for shower purposes. When the proper temperature is obtained, and as soon as the hot water is diverted from such tank through the shower spray 27, the float 26 in the hot water compartment 17 of said tank will be lowered, thereby opening the lever valve 25 to allow the cold water from the pressure tank *c* to enter

the compartment 16 in the tank *b* through the hose 23 and pipe 24. When the compartment 16 has been thus filled, the water passes over the partition 18 into the hot water compartment 17, so that such incoming water being colder circulates and is immediately heated by the hot water in said compartment 17.

In case it is desired to get a cold shower, the hot water valve 29 can be closed, and cold water can be passed from the compartment 16 in the tank *b* through the pipe 36 leading from the bottom of said compartment and connecting with the hot water pipe 28 with a hose connection 37 in the same, by simply opening a valve 38 in said pipe 36, and such direct connection from said compartment to the shower spray 27 permits a regulation of the temperature of the hot water flowing to such shower.

It will be obvious that the pressure tank *c* is not necessary or required when water pressure from any other source is admitted to the device *A*, so that such tank can be used for other purposes, such as fires, water sprays, etc.

Various other modifications and changes in the design, operation and construction of my improved combined water heater and shower bath can be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

It will thus be seen that the heating element or device is so arranged that the flame plays upon the water jacket section of the heater, and thereby eliminates all liability of the danger of burning out the lower portion of the heater, while the connections of the shower are so arranged that heated water from the heater or cold water from the storage tank or any mixture of the two can be obtained at the shower head or spray.

What I claim as my invention and desire to secure by Letters Patent is:—

1. A device of the class described, comprising a water heater having a water jacket, a storage tank having a cold water compartment and a hot water compartment therein, pipe connections between said jacket and said hot water compartment, pipe connections between said compartments and an outlet point, and means for heating said heater.

2. A device of the class described, comprising a water heater having an inner and an outer shell with a water space between the same, a storage tank having a cold water compartment and a hot water compartment therein, pipe connections between said space and said hot water compartment, pipe connections between said compartments and an outlet point, and means at the lower end of said inner shell for supplying heat through said shell to said space.

3. A device of the class described, com-

prising a water heater having an inner and an outer shell with a water space between the same, a storage tank having a cold water compartment and a hot water compartment therein, pipe connections between said space and said hot water compartment, pipe connections between said compartments and an outlet point, a lamp removably connected within said outer shell for supplying heat through said inner shell to said space, and means for supplying air to said lamp.

4. A device of the class described, comprising a water heater having an inner and an outer shell with a water space between the same, a storage tank having a cold water compartment and a hot water compartment therein, pipe connections between said space and said hot water compartment, pipe connections between said compartments and an outlet point, said inner shell having a deflecting portion at the lower end of the same, a lamp removably connected within said outer shell and adapted to have its flame deflected by said portion for supplying heat through said inner shell to heat said space, and means for supplying air to said lamp.

5. A device of the class described, comprising a water heater having an inner and an outer shell with a water space between the same, a storage tank having a cold water compartment and a hot water compartment therein, pipe connections between said space and said hot water compartment, pipe connections between said compartments and an outlet point, said inner shell having a deflecting portion at the lower end of the same, a lamp removably connected within said outer shell by a bayonet joint between the same and being adapted to have its flame deflected by said portion for supplying heat through said inner shell to heat said space, and means for supplying air to said lamp.

6. A device of the class described, comprising a water heater having a water jacket, a storage tank having a cold water compartment and a hot water compartment therein, pipe connections between said jacket and said hot water compartment, pipe connections between said compartments and an outlet point, means for heating said heater, and means for supplying cold water under pressure to said cold water compartment.

7. A device of the class described, comprising a water heater having a water jacket, a storage tank having a cold water compartment and a hot water compartment therein, pipe connections between said jacket and said hot water compartment, pipe connections between said compartments and an outlet point, means for heating said heater, and a tank connected to said cold water compartment for supplying cold water under pressure to said compartment.

8. A device of the class described, comprising a water heater having a water jacket, a storage tank having a cold water compartment and a hot water compartment therein, pipe connections between said jacket and said hot water compartment, pipe connections between said compartments and an outlet point, means for heating said heater, a cold water tank connected to said cold water compartment, and an air pump connected to said tank for supplying cold water under pressure from said tank to said cold water compartment.

9. A device of the class described, comprising a water heater having a water jacket, a storage tank having a cold water compartment and a hot water compartment therein, pipe connections between said jacket and said hot water compartment, pipe connections between said compartments and an outlet point, means for heating said heater, means for supplying cold water under pressure to said cold water compartment, and a valve in said supply means and operated by a float in said hot water compartment for controlling the supply of cold water to said compartment.

10. A device of the class described, comprising a portable unit composed of a water heater, a storage tank supported by and above said heater and having an outlet point provided with a nozzle, connections between said heater and tank for circulating the water, and means for heating said water.

In testimony whereof, I, the said SIMEON BUKA, have hereunto set my hand.

SIMEON BUKA.

Witnesses:

J. N. COOKE,
E. B. MOLTER.