S. J. LUKASZEWSKI.

HEATER.

APPLICATION FILED APR. 9, 1917.

1,249,644.

Patented Dec. 11, 1917.

2 SHEETS—SHEET 1.

Fig. 1.

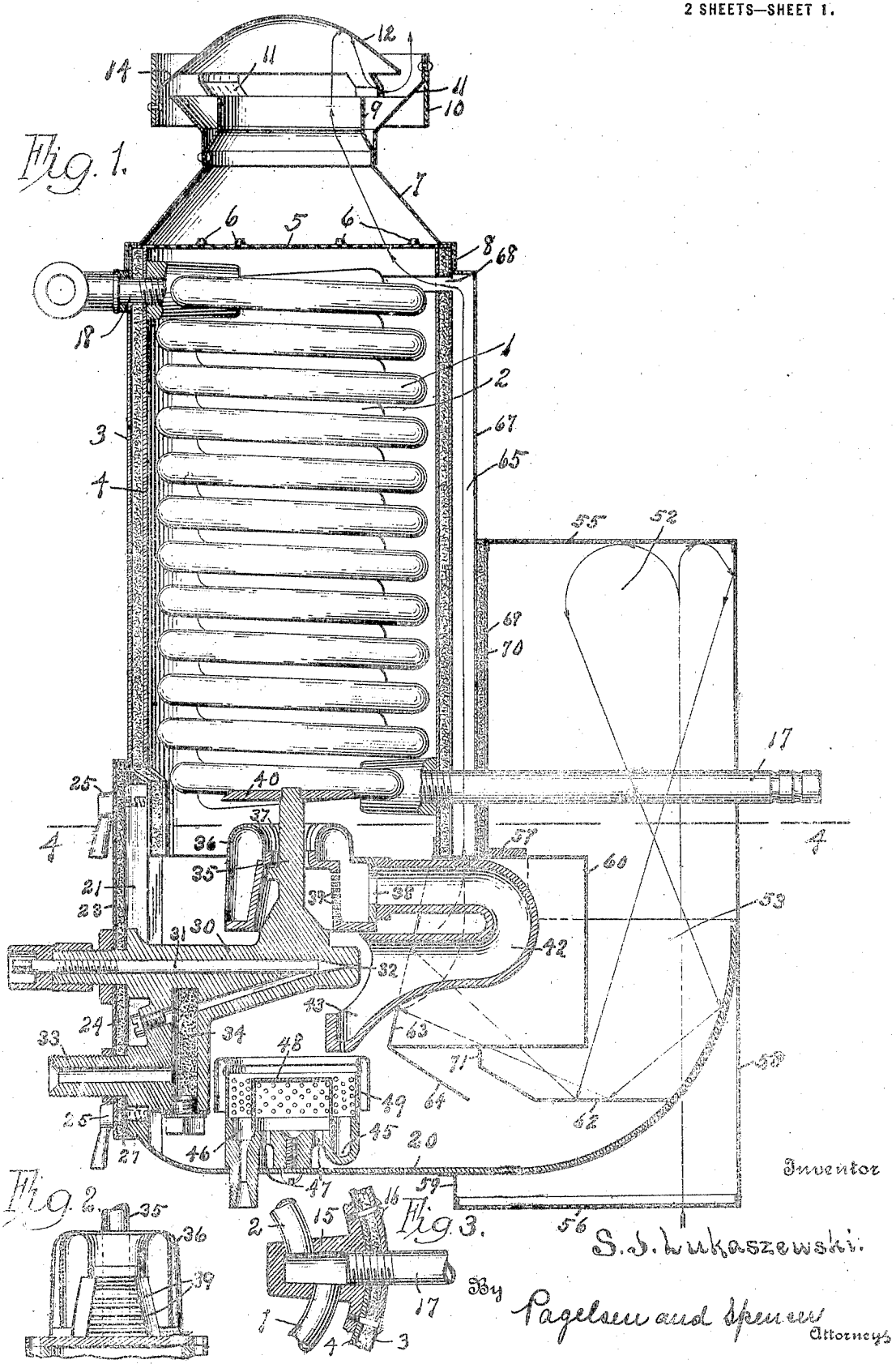


Fig. 2.

Fig. 3.

Inventor

S. J. Lukaszewski.

By Pagelsen and Spencer

Attorneys

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2 SHEETS—SHEET 2.

Fig. 4.

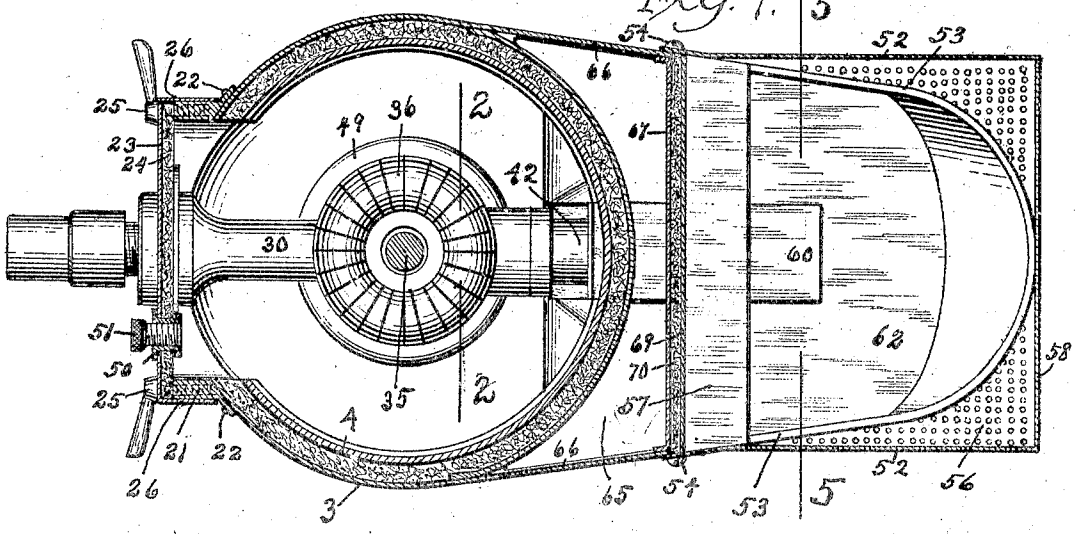
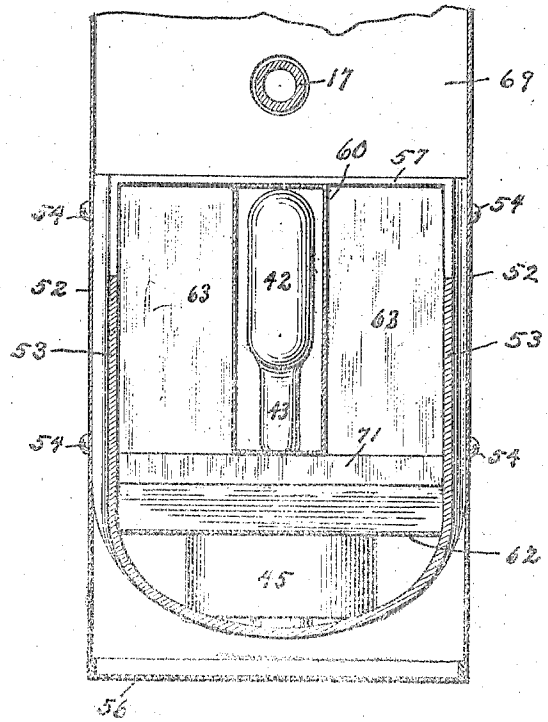


Fig. 5.



Inventor

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Attorneys

UNITED STATES PATENT OFFICE.

STANISLAW J. LUKASZEWSKI, OF DETROIT, MICHIGAN.

HEATER.

1,249,644. Specification of Letters Patent. Patented Dec. 11, 1917.

Application filed April 9, 1917. Serial No. 160,747.

To all whom it may concern:

Be it known that I, STANISLAW J. LUKASZEWSKI, a citizen of the United States, and residing at Detroit, in the county of Wayne and State of Michigan, have invented a new and Improved Heater, of which the following is a specification.

This invention relates to heaters especially adapted to keep warm the engines of motor vehicles during cold weather as set forth in my Patent No. 1,007,710, dated November 7, 1911, and the object of this invention is to provide a heater which will not be extinguished when the vehicle is passing over rough roads or during stormy weather, and which will permit of an easy removal of the burner at all times.

This invention consists, in combination with a coil and a shell around it, of a base below the shell and which is provided with novel baffle plates to control the currents of air, of a novel air inlet chamber extending over one end of the base, of a flue for excess air extending up the outside of the shell, of a burner below the coil, a burner, and novel means for mounting the burner within the base. It further consists in the details of construction illustrated in the accompanying drawings and particularly pointed out in the claims.

In the drawings, Figure 1 is a central vertical section of this improved heater. Fig. 2 is a section of the burner on the line 2—2 of Fig. 4. Fig. 3 is a horizontal section through a support for the coils. Fig. 4 is a section on the line 4—4 of Fig. 1. Fig. 5 is a section on the line 5—5 of Fig. 4.

Similar reference characters refer to like parts throughout the several views.

The shell in which the coils 1 and 2 are mounted is preferably formed of two metal sheets 3 and 4, preferably steel, and a sheet of asbestos between them. A top plate or diaphragm 5 is perforated to permit the escape of burnt gases and may be formed with small pedestals 6 to support a cooking utensil if desired. The removable hood is formed of a tapering body 7 having a flange 8 and a chimney 9. A ring 10 is carried by ears 11 on a thimble 12 and supports the cap 13 by means of the ears 14.

The coils 1 and 2 are secured at their ends in proper holes in the fittings 15 (Fig. 3), held in position in the shell by means of screws 16. The inlet pipe 17 and outlet pipe 18 for the water to be heated connect into these fittings.

The shell connects to and expands into the base 20, of cast or pressed metal, and the left end (Fig. 1) of the shell and base are cut away to permit the insertion of the burner. That end of the base and shell may have two reinforcing posts 21, either integral with it or secured to it, one at each side of the opening, which posts may be connected to the shell by means of rivets 22 as shown in Fig. 5.

The door is formed of a sheet of metal 23 and an asbestos lining 24, secured in position by means of the screws 25. The side edges 26 of the door may extend over the posts 21, the bottom edge 27 may extend over the base and the top edge may be folded down over the lining as shown in Fig. 1. The burner is mounted on this door and can be slipped into and out of position as desired.

The body 30 of the burner has a horizontal bore to receive the needle valve 31 and has a horizontal discharge orifice 32. A fuel supply pipe connects to the nipple 33 and the fuel passes through the combined filter and storage chamber 34. This storage chamber will usually contain sufficient liquid fuel to feed the flame while the supply tank is being refilled, the fuel in the supply chamber vaporizing during such time. The post 35 on the body supports a burner ring 36 having the usual slots 37, intake opening 38 and passages 39 to permit gas to burn around the post and above the body 30 of the burner to heat the post and body. A deflector plate 40 at the top of the post causes the flame to pass up between the coils instead of up through the inner coil. The U-shaped mixing tube 42 has a downward extension 43 which catches the liquid fuel which may drip from the orifice 32 and conveys it to the igniter.

The igniter is secured to the base in any desirable manner and is formed with a trough 45, an overflow 46 that regulates the height of fuel in the trough, air passages 47, a perforated thimble 48 and a perforated ring 49. The fuel in this trough may be ignited by inserting a taper or a wire tipped with a ball of fiber soaked in alcohol through the opening in the door shown in Fig. 4, where a threaded bushing 50 receives the plug 51. This plug may be temporarily removed but must be replaced to prevent ignition of any gasolene fumes which might be in the air of the room where the burner is used.

An air chamber fits around a lateral extension of the base and is preferably no wider than the shell. The free edges of its sides 52 are preferably secured to the sides 53 of the extension of the base by means of the screws 54, its top 55 is sufficiently above the bottom of the base to insure a large quantity of inert air, and its bottom 56 is perforated to admit air. A small cross plate 59 connected to the sides 52 may be used to close the space between the bottom 56 and the base of the heater.

The sides 53 of the base preferably converge and are integral with the rounded end which leaves a considerable air passage between it and at least one of the sides or the outer end 58 of the air chamber. A cross bar 57 extends between the sides of the base and below it is a box-like case 60 to receive the U-shaped tube 42. A horizontal baffle plate 62 extends from the outer end wall of the base to below the case 60 and then bends up to this case. A second baffle plate 63 extends down from the bottom of the shell at the top of the case 60 on each side of this U-shaped tube to the bottom of the case 60 and then bends back toward the plate 62 to form an intercepter 64.

A flue or passage 65 is formed by the side plates 66 which are preferably portions of the shell, as shown in Fig. 4, and the outer plate 67. A passage 68 in the shell just below the top plate 5 permits the air which rises in the flue 65 to enter the shell. A second plate 69 holds the sheet of asbestos 70 in position, which prevents heat passing to the air chamber, thus keeping the flue warm and causing the air therein to rise.

After the fuel in the igniter trough 45 is burning, it heats the body of the burner and vaporizes the fuel which passes to the burner ring and is there ignited by the flame of the liquid fuel in the trough. Air enters through the perforations in the plate 56 and passes up into the air chamber and then down into the base. Some of this air passes between the baffle plates directly to the burner; the remainder is thrown up by the inner edge 71 of the plate 62 and impinges on the plate 63 and passes up the flue 65 and out through the passage 68 and the perforated top 5 of the shell. Any sudden gust or blast of air entering through the holes in the plate 56 will be cushioned by the air in the air chamber, and if the current down into the base is swift, the air will be mostly deflected to the flue 65. No more air passes down around the deflector 64 than is necessary for the burner, and most severe tests have shown that the flame of the burner cannot be extinguished by high winds or by jars.

I claim:—

1. In a heater, the combination of a cylindrical shell, a heating coil therein, a burner below the coil, a base upon one end of which the shell is mounted and provided with a lateral extension, a door at one end of the heater and means to secure the burner to said door, an air chamber slidable onto the extension of said base and spaced therefrom at at least one side and having a perforated lower end and a closed upper end, baffle plates mounted within the base, and a passage for excess air extending up from said base along the shell.

2. In a heater, the combination of a cylindrical shell, a heating coil therein, a burner below the coil, a perforated top for the shell, a hood over said top, a base below one end of the shell and having an extension, an air chamber slidable onto the extension of the base and so formed that at least one wall is spaced from the base, said air chamber having a perforated bottom and a closed top, baffle plates mounted within the base, and a passage for excess air extending up from said base along the shell, said shell being formed with an opening just below its perforated top to communicate with said passage.

3. In a heater, the combination of a shell and a coil therein, a base to which the shell is connected and having a lateral extension, an air chamber fitting over said extension and having a side spaced therefrom and provided with a closed top, baffle plates within the base, and a passage for excess air extending up from the base along the shell.

4. In a heater, the combination of a shell and a base therefor having a lateral extension, an air chamber mounted around said extension and having at least one side spaced therefrom, said air chamber having a closed top and a perforated lower end, two baffle plates within the base adapted to deflect upwardly the air entering the extension of the base, and a flue extending up from the base to carry away the upwardly deflected air.

5. In a heater, the combination of a shell and a coil therein, a base to which the shell is connected and a burner within the base below the coil, an air chamber adjacent the base and having a side spaced therefrom, the top of the air chamber and the bottom of the base being closed, means to obstruct the flow of air within the base, and a passage for excess air extending up from the base along the shell.

STANISLAW J. LUKASZEWSKI.