

Sept. 2, 1924.

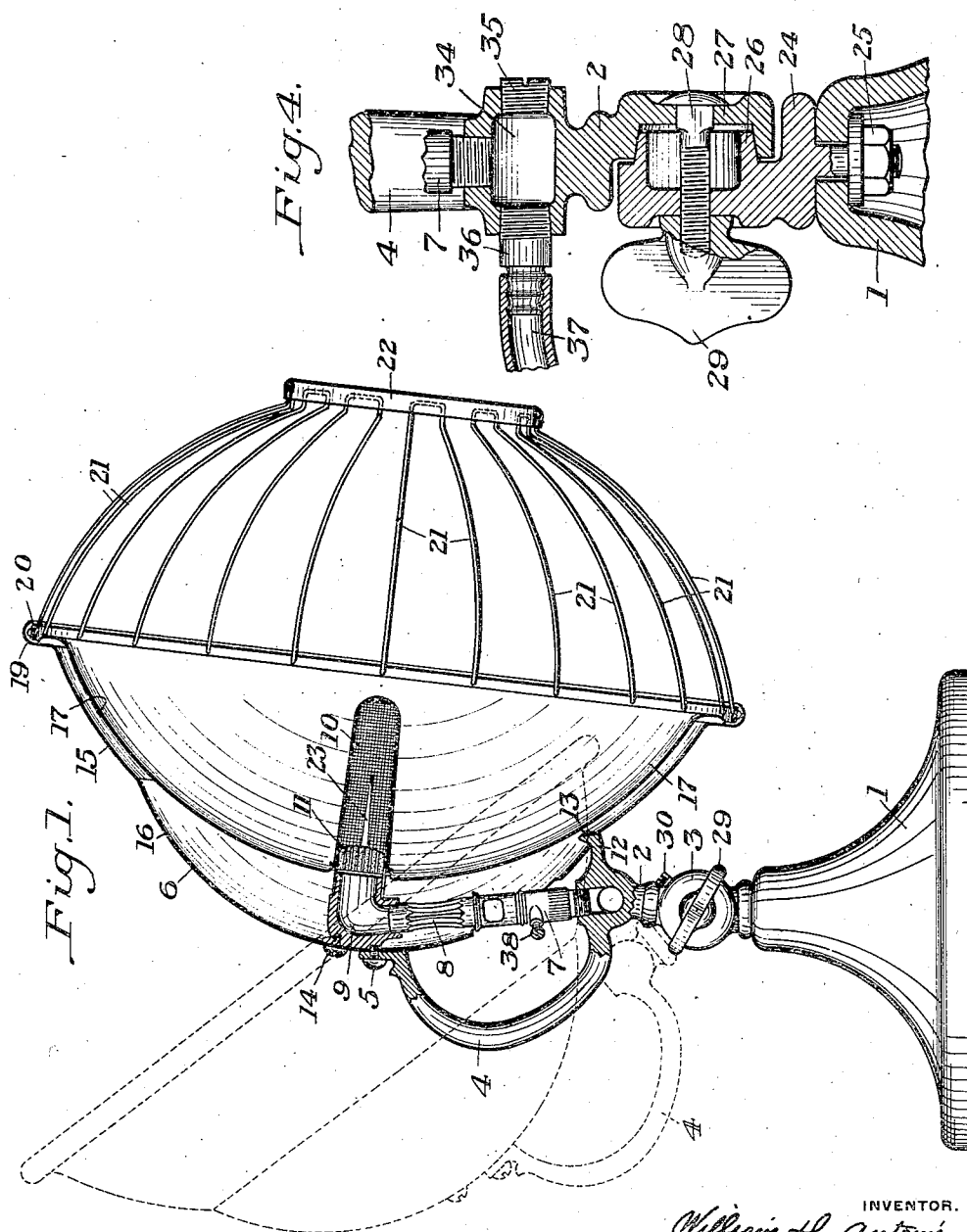
W. D. ANTRIM

1,506,964

HEATER

Filed March 28, 1921

3 Sheets-Sheet 1



INVENTOR.
William D. Antrim,
by Bakewell, Byrnes & Parmelee,
his attys.

Sept. 2, 1924.

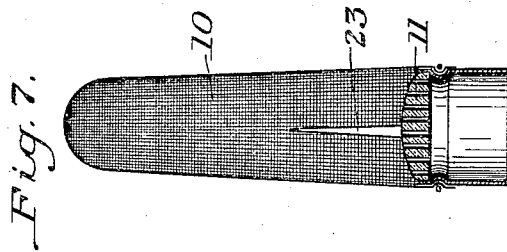
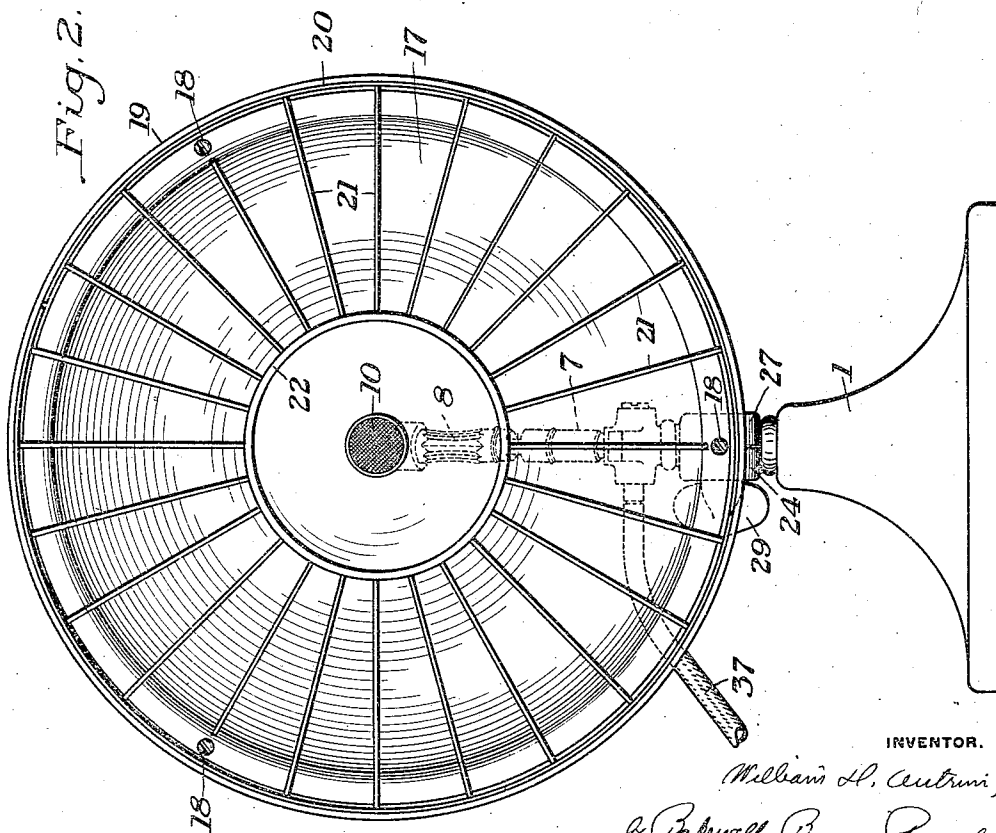
W. D. ANTRIM

1,506,964

HEATER

Filed March 28. 1921

3 Sheets-Sheet 2



INVENTOR.

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Sept. 2, 1924.

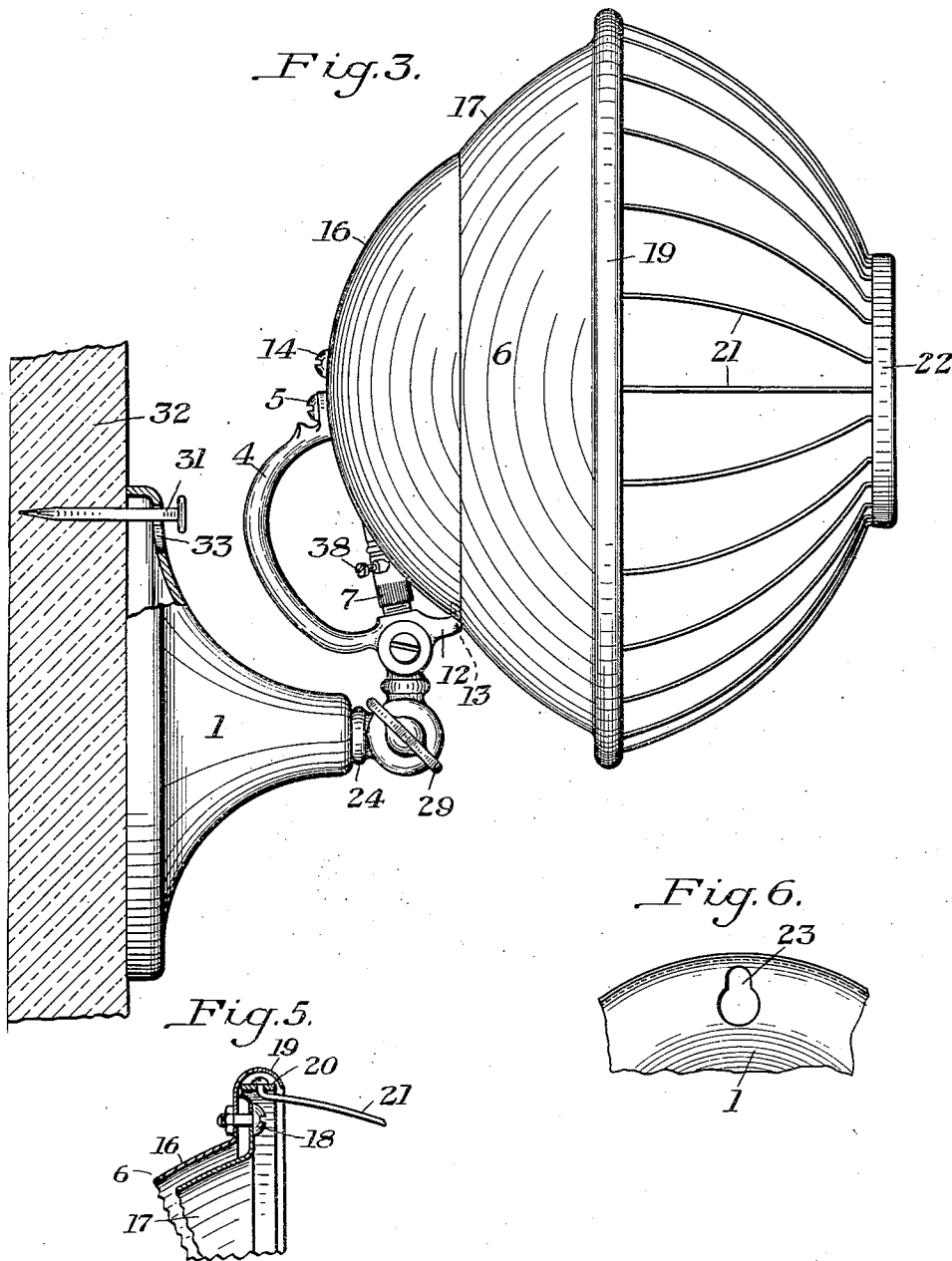
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W. D. ANTRIM

HEATER

Filed March 28, 1921

3 Sheets-Sheet 3



INVENTOR.

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UNITED STATES PATENT OFFICE.

WILLIAM D. ANTRIM, OF GLOUCESTER, NEW JERSEY, ASSIGNOR TO WELSBACH COMPANY, OF GLOUCESTER, NEW JERSEY, A CORPORATION OF NEW JERSEY.

HEATER.

Application filed March 28, 1921. Serial No. 456,091.

To all whom it may concern:

Be it known that I, WILLIAM D. ANTRIM, a citizen of the United States, residing at Gloucester, in the county of Camden and State of New Jersey, have invented a new and useful Improvement in Heaters, of which the following is a full, clear, and exact description.

My invention relates to heaters and particularly to gas heaters of the portable type.

An object of my invention is a heater of great efficiency and of simple and attractive design.

Another object of my invention is such a device by which the heat produced may be directed in a plurality of directions by simple and convenient adjustments.

Another object of my invention is such a device which may be placed on the floor or other convenient place or may be hung on the wall or other convenient support and still retain the adjustable features above mentioned.

Another object of my invention is the arrangement of the heating and reflecting elements in such manner as to produce the greatest efficiency of heat generation and reflection in a simple and compact apparatus.

Another object of my invention is the arrangement whereby the burner element may be readily lighted without disturbing the guard.

Another object of my invention is the provision of means whereby the heating fuel may be supplied from either side of the device and is supplied between the point of adjustment and the burner element, thus avoiding the problem of conducting said fuel through the adjusting means.

Another object of my invention is to procure the objects heretofore expressed with a light, simple, durable, efficient and attractive mechanism.

My invention will be better understood by reference to the following description taken in connection with the attached drawings forming a part thereof, and in which Figure 1 is a side elevation of the device shown partly in section in full lines and shown in outline in dotted lines in another position.

Figure 2 is a front elevation showing certain parts in dotted lines;

Figure 3 is a side elevation with the device hung from a support;

Figure 4 is a detail sectional view of the hinge-joint and support and gas inlet;

Figure 5 is a detail view showing the manner of securing the guard in place;

Figure 6 is a front elevation of a portion of the base showing a key-hole for supporting the device; and

Figure 7 is an elevation of the mantle showing the reflector tip in section.

Referring to Figure 1 the device comprises a base 1 and a support 2, the parts 1 and 2 being adjustably connected to each other through a hinge-joint 3. The support 2 has a handle portion 4, the upper end of which is provided with an opening through which a screw 5 or other suitable means passes. A casing 6 of a general concave configuration is carried by the support 2. The support 2 is also provided with a threaded opening into which a burner 7 of the Bunsen type is screwed, the said burner having a mixing tube 8 opening into an elbow 9 which acts to conduct the combustible mixture into the mantle 10. The tip of the burner is provided with a foraminous disk 11. The disk 11 may be located at any other convenient place in the mixing tube.

The casing 6 is supported at one point by the screw 5 which passes through the handle 4 and the casing 6 and firmly engages the elbow 9. This casing is supported at another point by a connection 12 on the support 2 which has an upturned portion 13 entering an opening in the casing 6. By the arrangement just described, the casing may be removed from the support 2 by merely removing the screw 5, and moving the casing upwardly to disengage it from the upturned portion 13. The elbow 9 is secured to the casing 6 by screws 14 and when the casing is removed from the support 2 the elbow separates from the Bunsen mixing tube 8.

From the construction above described it will be apparent that the Bunsen device has a substantially vertical mixing chamber in the tube 8 which leads through the elbow

9 into the mantle 10, which is at substantially right angles to the mixing tube 8 and therefore normally substantially horizontal. By reason of its general vertical position the Bunsen device gives an improved mixture.

The casing 6 has a portion 15 and a portion 16 which are curved on different radii, the portion 16 being on a shorter radius than that of the portion 15. The casing 6 carries a concave reflector 17 which has an opening centrally thereof, through which the mantle 10 extends. The reflector is fastened to the casing near its periphery by any suitable means such as screws 18, as shown in Figures 2 and 5. The reflector is bent upon substantially the same radius as that of the portion 15 of the casing 6, and by reason of the different curvature of the portion 16 of the casing 6 a chamber is provided between the reflector and the portion 16, in which chamber is placed the elbow 9 and a portion of the Bunsen mixing device, there being an opening in the casing through which the Bunsen device 7, 8 extends.

At the periphery of the casing 6, a portion 19 thereof is bent over and inwardly, thus forming a circumferential chamber into which a split ring 20, which supports a guard, may be placed, as shown in Figure 5. The guard comprises the ring 20 through which at uniform intervals extend the free ends of guard members 21. The members 21 are U-shaped and are bowed outwardly, as shown in Figure 1. The closed ends of the members 21 are held by a member 22 which is folded back upon itself and clamps said closed ends in place as shown in Figure 1. The member 22 is in the form of a ring of such size that the hand may pass there-through to light the burner or mantle 10. The mantle shown in the drawings is made of metallic woven mesh, the mesh being fine enough to keep the flame inside where it will heat the mantle. This mantle has an opening 23 in the side thereof which allows the Bunsen flame to be lighted inside the mantle, thus avoiding the indeterminate time required for the flame to flash inside the mantle. A nichrome gauze mantle is preferred thus avoiding the fragility of a fabric mantle and affording a permanent heating element.

The mantle is also preferably placed in an axial position with respect to the reflector, as in that position it forms the least obstruction to the heat rays reflected by the reflector.

Other forms of mantle may be used, however, and many of the advantages of my invention secured.

Referring to Figures 1 and 3, it will be noted that the support 2 is adjustable relative to the base 1. This adjustment is pro-

cured by reason of the hinge-joint shown in detail in Figure 4. This joint comprises a member 24 fastened to the base 1 by means of a nut 25 screwed onto a threaded portion of the member 24. The member 24 is also provided with a frusto-conical portion 26. Co-operating with the portion 26 is a member 27 fitting onto the outside of the frusto-conical portion 26. A bolt 28 passes through an opening in the members 24 and 27 and carries a thumb nut 29 which may be adjusted so as to hold the base 1 and support 2 in fixed relation with each other. The head end of the bolt is squared so as to prevent turning of the bolt during the turning of the nut.

A stop 30 is placed on the member 24 to limit the forward movement of the support 2 to the position shown in Figure 1. The position of the stop 30 may be changed, however, so as to allow for any desired degree of forward movement of the support 2 with respect to the base 1. The object of providing a stop is to prevent the support 2, together with the parts carried thereby from tilting too far forward. By loosening the nut 29 the support 2 may be moved to the position with respect to the base 1, shown in Figure 3 or any intermediate position desired. In Figure 3 the device is shown as being suspended from a nail 31 driven into a support 32, such as a wall or the like. In Figure 6 is shown an opening 33 in the base 1 through which the supporting means 31 passes.

Referring to Figure 4 it will be noted that the support 2 is provided with a chamber 34 having a screw threaded opening on either side thereof. On one side the opening is closed by a plug 35, whereas on the other side a gas inlet nipple 36 is screw into position for the attachment of a supply line 37 of any desired character. The nipple 36 and the plug 35 may be interchanged at will thereby affording means whereby the fuel supply may be connected to either side of the device, thus rendering it either right-handed or left-handed.

The Bunsen device screws into communication with this chamber 34 and is provided with the usual gas control 38.

From the foregoing description it will be apparent that the support 2, together with the parts carried thereby, may be adjusted to any desired position with respect to the base 1, and that the gas inlet is provided at a point between the joint and the burner so that special means need not be provided in the joint for accommodating the passage of the gaseous fuel therethrough. However, many advantages of my invention may be secured with an arrangement wherein the fuel supply passes through the joint.

My invention has many advantages over prior heating devices. It is of light weight

and simple in construction; it is adjustable so as to direct the heat to the desired point; it is of rugged construction, of pleasing design and unusually economical and therefore efficient.

The construction is such that the burner may be lighted without moving any parts and the flame passes immediately into the mantle and is confined therein.

While I have described my invention more or less in detail, I desire it to be understood that I am not to be limited to the exact construction shown and described, as for instance any approved form of heating element may be used instead of that shown and described; and many forms of joint between the base and support may be used; and many forms of guard for the reflector may be used; many detail changes may be made in the casing, the handle and other features without in any of these departing from the spirit of my invention as recited in the claims appended hereto.

I claim:

1. A radiating heater comprising a base, a member adjustably supported by said base, said member having a portion acting as a handle and provided with means for receiving gaseous heating fuel from each of a plu-

ality of directions, substantially as described.

2. A radiating heater comprising a concave casing having portions curved on different radii, a reflector supported by said casing and being curved on the larger of the radii of said casing, thus providing a chamber between said reflector and the casing at its smaller radius and gaseous heating fuel supply means in the chamber thus produced, substantially as described.

3. A radiating gas heater comprising a reflector, a gauze mantle located centrally of said reflector and having an opening therein to facilitate lighting thereof, substantially as described.

4. A radiating heater comprising a base, a member adjustably supported by said base, said member having a portion acting as a handle and provided with means for receiving gaseous heating fuel from each of a plurality of directions, a burner element, and a guard for said burner element having an opening therein through which said burner element may be lighted, substantially as described.

In testimony whereof I have hereunto set my hand.

WILLIAM D. ANTRIM.