May 15, 1923. 1,455,551

G. E. RYAN

HEAT DEFLECTION SHIELD

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Fig. 1.

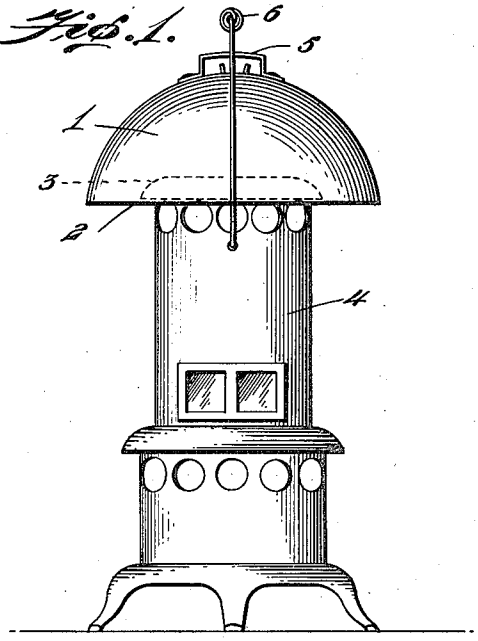


Fig. 3.

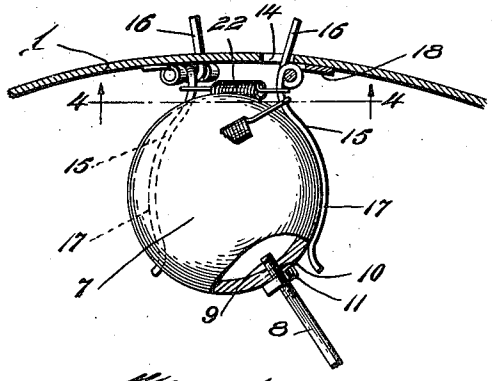


Fig. 4.

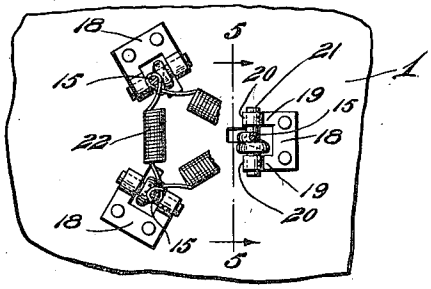


Fig. 2.

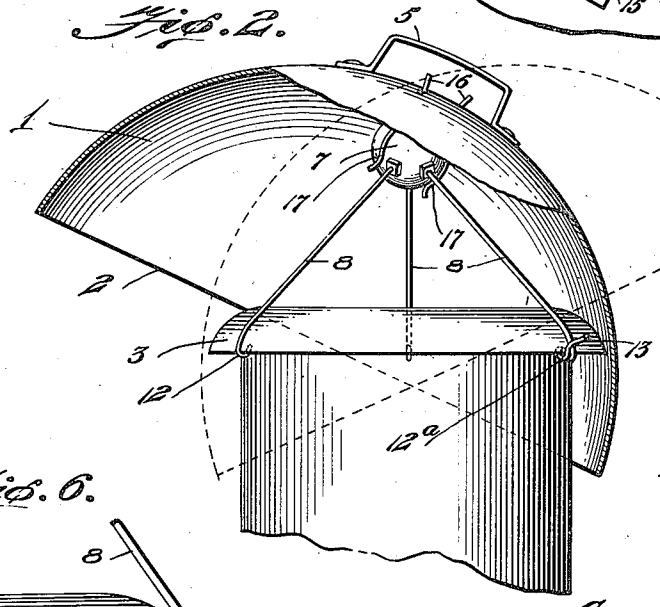


Fig. 5.

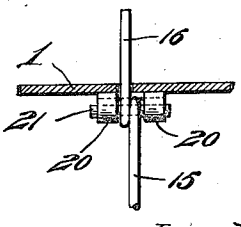
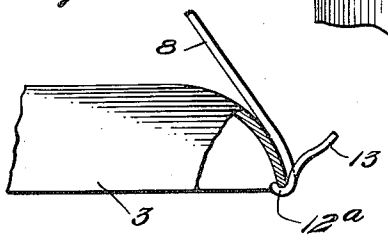


Fig. 6.



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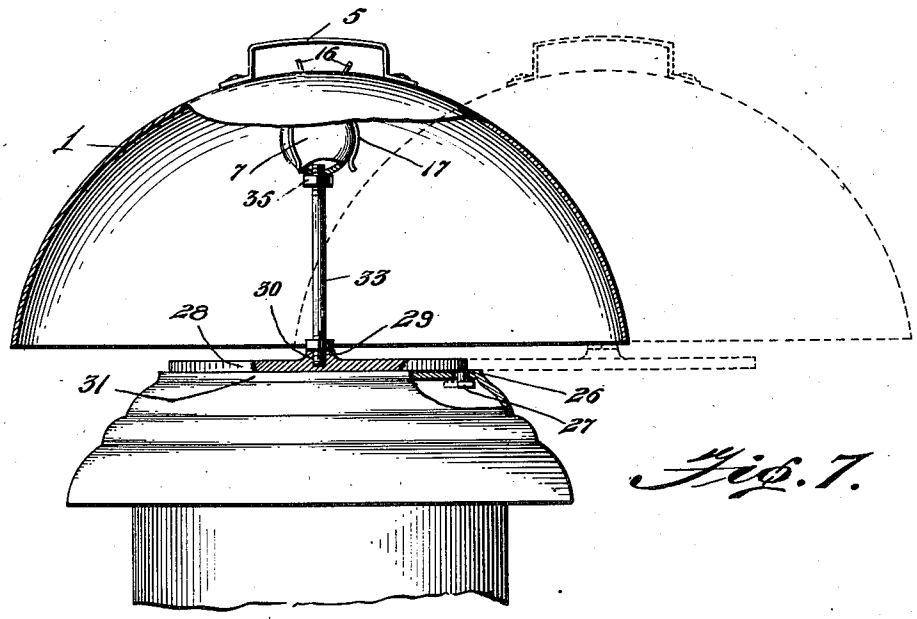


Fig. 7.

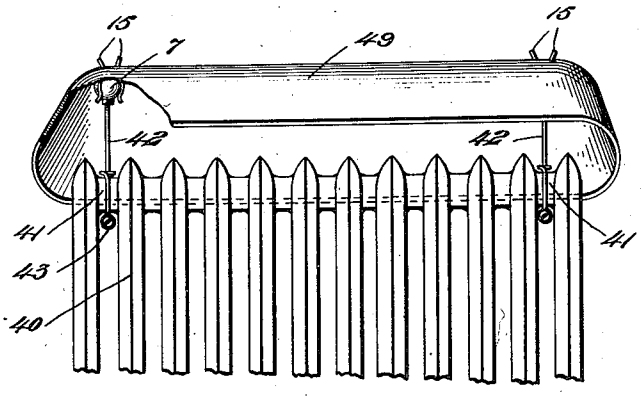


Fig. 8.

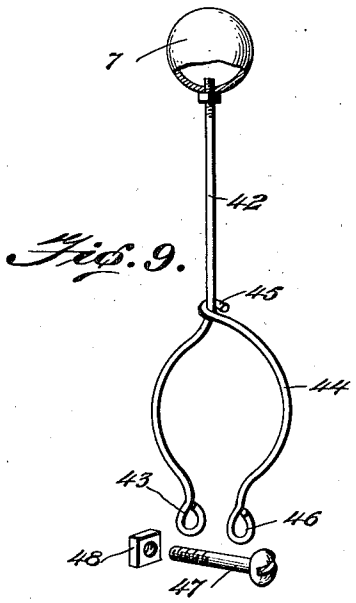


Fig. 9.

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UNITED STATES PATENT OFFICE.

GEORGE E. RYAN, OF EAST TAUNTON, MASSACHUSETTS.

HEAT-DEFLECTION SHIELD.

Application filed April 7, 1922. Serial No. 550,438.

To all whom it may concern:

Be it known that I, GEORGE E. RYAN, a citizen of the United States, residing at East Taunton, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Heat-Deflection Shields, of which the following is a specification.

My invention relates to improvements in heat deflection shields, adapted for use on any type of heating unit.

One object of the present invention is to provide a heat deflection shield which will encompass and conserve the heat rays and throw them en masse in any desired direction. One disadvantage of the existing small unit heaters especially when used in large rooms, is that the heat rises rapidly to the top of the room and its effect in heating that large room is negligible. This invention comprises a means whereby the heat rays are conserved, and concentrated on any desired spot adjacent to the heater in that room.

Another object of my invention is to provide a readily adjustable heat deflection shield. By a mere squeeze of the hand and twist of the wrist the heat rays are directed to another different desired position. It will be seen that with the clamp and ball adjustment shown, the shield can not only be moved quickly and readily backward and forward, but also in any angular direction within reasonable limits.

Another object of my invention is to provide a simple, practical and comparatively inexpensive deflection shield which can be readily adjusted to fit any type of existing heating units.

In the drawings in which various preferred adaptations of the heat deflection shield are shown, like characters of reference designate corresponding parts throughout.

Figure 1 is a side elevation of an oil heater, with the heat deflection shield attached. Figure 2 shows the upper portion of an oil heater with the heat deflection shield partially shown in section attached thereon. Figure 3 is a detailed view illustrating the clamp and ball attachment, showing the hood in fragmentary section. Figure 4 is a detail view taken along the lines 4—4 in Figure 3. Figure 5 is a cross section of a portion of the hood taken along the lines 5—5 in Figure 4. Figure 6 is a fragmentary view, illustrating in detail the lower extremity of one or more of the rods and latch members formed thereon. Figure 7 is an elevation of the upper portion of a coal heater with my device attached, part shown in section. Figure 8 is an elevation partially in section showing an elongated adaptation of my invention attached to a radiator. Figure 9 is a detail view showing the method of supporting my device when used as shown in Figure 8.

In the drawings 1 is the dome shaped hood forming the deflection shield. A dome shaped hood is shown, but it is understood that other shapes of hoods or flat plates may be used. The preferred construction is to have the base 2 of the hood when the hood 1 is set parallel to the top of the heater (Figure 1) extend where possible slightly below the top surface of the cover 3 of the heating unit 4. Attached to the top of the hood is the handle 5, for the convenient removal of the hood. In Figures 1 to 6 the preferred construction of the heat deflection shield for use on an oil, gas or electric heater is shown. It will be seen that the construction is so compact, that even when the shield is in use, the heating unit handle 6, will pass freely over the hood 1, so that the entire heating unit 4 with shield attached may be moved.

At a convenient point above the top of the heating unit 4 is supported the ball 7. This is supported in the preferred construction by three or more rods 8, spaced relative to each other. These rods are preferably made of wire. They are threaded at their upper ends 9 and are screwed into threaded holes 10 in the base of the ball 7, and are locked in any desired position by the nuts 11. The wire rods 8 are bent over at their lower ends in the form of hooks 12 to fit underneath the cover 3 of the heating unit 4. To facilitate convenient removal from the heating unit cover 3, one or more of the rods terminates at its lower end in the spring catch 12^a formed by bending the rod 8 first inwardly to form the spring catch 12^a, and then backwardly parallel to itself to form the outward extension 13. By pressing upwards on the outward extension 13 the end of the spring hook 12^a is depressed in a manner to release the flange of the heating unit cover 3 so that the rod may be conveniently detached.

Extending through the slots 14 in the hood 1 and pivotally mounted thereon are the finger clamps 15. The upper ends 16 of the finger clamps 15 are arranged in the form of handles so that they may be conveniently grasped by the ball of the hand and squeezed. The inward movement of the finger clamps 15 is limited by the upper ends 16 coming in contact with the outer ends of the slots 14. The lower ends or finger portions 17 of the finger clamps 15 extend downwardly and are bent to contain the ball 7. Underneath the slots 14 in the hood 1 and adjacent thereto are riveted the plates 18. Arms 19 of the plates 18 straddle the slots 14 and have formed thereon the bearing sleeves 20. The bearing sleeves 20 have mounted thereon the short rods 21. The finger clamps 15 at their point of support are bent in circular form for pivotal mounting on the rods 21. Tension springs 22 extend from finger clamp to finger clamp (Figure 4), at a convenient point below their mounting on the hood 1 and exert their tension to resiliently draw the finger clamps 15 towards each other, thus causing them to grip the ball 7.

To attach the deflection shield insert the hooks 12 underneath the flange of the heating unit cover 3, press downwardly on the rod 8 containing the spring latch 12^a, whereby it will automatically spring to its closed position as shown in Figure 2. Squeeze the handles 16 of the finger clamps 15 thereby extending the lower ends or finger portions 17 of the finger clamps 15 so as to contain the ball. On releasing the pressure on the handle 16 the springs 22 cause the finger clamps 15 to grip the ball and to hold the hood in place. The heat deflection shield is now completely attached. The hood 1 may be set at any desired angle by a mere repetition of the latter part of the process.

To detach the deflection shield, grip the handles 16 of finger clamps 15 with the hand, and lift the hood from its set position. Press upwards on the outward extension 13 and release the spring catch 12^a. The ball 7 and supporting rods 8 may now be readily lifted off the heating unit 4.

Other adaptations of my invention are shown in Figures 7 and 8. Figure 7 shows my invention adapted to the ordinary coal heater. In the top 31 of the coal heater is found the usual aperture 26. It has been the custom to attach ornaments to the top of these coal heaters by means of a hook 27, on the under face of the ornament and near its outer periphery, which fits into the aperture 26. The ball supporting base 28 of my invention is attached in similar fashion and is substituted for the usual ornament. The ball supporting base 28 is disk shaped and in its center is the boss 29 provided with a socket 30, into which is threaded the lower end of the ball supporting rod 33. The top of the ball supporting rod 33 is screwed into a threaded hole in the base of the ball 7 and held in position by means of a nut 35. When access to the top of the heater is desired, the deflection shield may be swung to the position shown in dotted lines.

In Figure 8 my invention is shown adapted to a steam radiator 40. Two or more balls 7 are mounted on the top horizontal pipe 41 of the radiator by means of supporting rods 42. The lower portion of the rods 42 is bent in semi-circular form to fit around the pipe 41 and at their lower extremity these rods 42 are provided with eyes 43. For cooperation with the supporting rods 42 in securing them to the radiator are the semi-circular members 44, provided at their upper ends with the hooks 45 for engagement with the rods 42 as shown and at their lower ends with the eyes 46. Bolts 47 are inserted through the eyes 43 and 46. By means of nuts 48 screwed on to the threaded ends of the bolts 47 tension is given to the supporting rods 42 and semi-circular members 44 and they are thus securely clamped and held in position. The hood 49 in this adaptation is extended longitudinally to cover the top heating surface of the radiator 40, and is provided with two or more sets of finger clamps 15 which are manipulated as shown in previous adaptations.

Though the invention is shown adapted to an oil, gas or electric heater, a coal heater, and a radiator, it is understood that it may be adapted to any form of heating unit, such as steam boilers, furnaces, etc., and that changes in form and structure may be made without departing from the essence of the invention.

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

1. A heat deflection shield of the character described, comprising a ball, means for mounting it on a heating unit, a hood, and means attached to the hood for gripping the ball, and holding the hood in any desired position.

2. A heat deflection shield of the character described, comprising a ball, means for mounting the ball on the heating unit, a hood, finger clamps pivotally mounted on the hood, the upper ends of which extend through the hood and form hand gripping handles, and the lower ends of which extend downwardly and are bent to contain the ball, and tension means attached to the finger clamps to cause them to grip the ball and to hold the hood in any desired position.

3. The combination with a heater of a heat deflection shield of the character described, comprising a ball, spaced ball supporting rods threaded into the ball, hooks for clamping these rods to the heater cover, one or more rods being bent at its lower ex-

tremity into the form of a spring hook with an outward extension for convenient removal from the heating unit cover, a hood, finger clamps pivotally mounted on the hood, the upper ends of which extend through the hood and form hand gripping handles, and the lower ends of which extend downwardly and are bent to contain the ball, and tension means attached to the finger clamps to cause them to grip the ball and to hold the hood in any desired position.

4. The combination with a heater, of a heat deflection shield of the character described, comprising a ball, a supporting rod attached to the base of the ball, a disk shaped base for supporting the rod having a hook on its under face and adjacent to its outer periphery adapted to engage an aperture in the top of the heater, a hood, finger clamps pivotally mounted on the hood, the upper ends of which extend through the hood and form hand gripping handles, and the lower ends of which extend downwardly and are bent to contain the ball, and tension means attached to the finger clamps to cause them to grip the ball and to hold the hood in any desired position.

In testimony whereof I affix my signature.

GEORGE E. RYAN.