German utility model no. DE202024101637U1

Device for Temporary Insulation of Radiator Thermostats

Description

The present invention relates to the technical field of heating technologies, specifically the optimization of heating systems by reducing the heat output of radiators using thermostat valves.

Current solutions in the area of radiator thermostat valves aim to regulate room temperature by automatically adjusting radiator output. However, at temperatures below 5 degrees Celsius, and especially during ventilation phases in winter, many thermostat valves open even when set to frost protection mode. This results in unnecessary energy consumption and the heating of outside air.

The main drawbacks of current solutions lie in the inefficient use of heating energy during ventilation phases in cold seasons. Despite the frost protection setting, the thermostat valves respond to very cold outside air by increasing heat output, leading to significant energy loss. Other solutions primarily rely on intelligent control and adjustment of heating output to contribute to more efficient energy use.

This invention addresses this problem by introducing a simple yet effective thermal (or cold-resistant) insulating cover for radiator thermostat valves at very low temperatures. This cover is applied before ventilation and removed after ventilation ends. It is made of heat-insulating materials such as plastics (e.g., foam) or natural materials. This keeps the valve closed during ventilation phases, reducing energy consumption and enabling more efficient use of the heating system. This direct method of energy saving through the physical insulation of the thermostat during ventilation processes can be seen as a complementary measure to existing technological solutions.

Background of the Invention

My invention is therefore based on the alternative development of devices to prevent heat loss from radiators. There are few solutions related to this invention, such as radiator thermostats that include a "window open detection" feature.

Existing solutions fulfill their intended functions but do not have the capabilities of the above-mentioned invention.

A universally applicable solution is desired. The invention specified in claim 1, a device for the temporary insulation of radiator thermostats with a cover made of insulating material, meets these requirements. This direct method of energy saving through the physical insulation of the thermostat provides an immediate solution to reduce heat loss by manually covering the thermostat.

Example of Implementation

The present invention relates to an improved system for heating energy consumption through a thermal (or cold-resistant) insulating cover for radiator thermostats. The aim of the invention is to minimize unnecessary energy consumption that occurs when thermostat valves unnecessarily open at low outside temperatures, especially during normal ventilation phases in cold seasons.

The radiator thermostat 2 is a standard thermostat valve used to regulate room temperature on radiators 4. The innovative aspect of this invention is the thermal insulating cover 1, which (according to claim 2) is made from a highly insulating material such as special plastics (e.g., foam) or natural materials. This cover is designed to be placed over the thermostat 2 to prevent unwanted responses to short-term temperature fluctuations caused by opening windows or doors for ventilation (Fig. 1).

Before ventilation, the thermal insulating cover 1 is placed over the thermostat 2. This cover fits precisely over the valve handle and temperature scale and can be equipped with an attachment tab / fastening / holder 3 to facilitate attachment and removal.

The cover manipulates the "temperature perception" of the thermostat. Even when the room temperature drops sharply during ventilation, the valve remains closed because the cover

forms an insulating layer that prevents the thermostat from detecting the cold outside temperature. After ventilation ends, the cover is removed, allowing the radiator thermostat to regulate the room temperature normally again.

The insulation of the cover is, however, dimensioned for most applications so that it does not pose a risk to the heating system or heating pipes due to freezing. If, for example, a window is accidentally left open for an extended period at extremely low temperatures, the frost protection feature will activate, and the radiator will warm up.

The thermal insulating cover can be made from various materials, with a focus on high thermal insulation capability. The design is chosen to enable easy handling while effectively insulating the thermostat's temperature perception when needed.

Additional Configurations

Various designs are also possible:

If the cover 1 is not in use (Fig. 2) and if a tab 3 is desired, which then hangs, for example, below the radiator thermostat, as shown in claim 3, it can be made from different materials (plastic, natural materials, metal, rubber band, etc.). The cover may have eyelets, be recyclable/reusable, and also be attached without a tab by hooking onto a hook. According to claim 4, the cover can be tightened like a bag/pouch or equipped with a similarly functioning Velcro strap.

As shown in claim 5, it may be useful for certain applications (residential, commercial, and industrial environments) for the radiator thermostat to be insulated from the cold for a longer period. For this purpose, a heat storage unit (water, latent heat storage, etc.) or a battery that includes a very small electric heater can be integrated into the cover. The cover can also feature vacuum insulation (similar to a thermos flask or corresponding insulation material), a closure mechanism on the cover such as a zipper, Velcro, or snap buttons, which allows secure attachment of the cover to the thermostat without heat loss, etc.

All components (according to claim 6) are recyclable/reusable.

As shown in claim 7, the cover can be adapted to various sizes and shapes of thermostat valves.

According to claim 8, the cover can have water-repellent properties, be UV-resistant and fire-resistant, have an outer surface designed for visual identification or decoration, and possess special properties that prevent the growth of microorganisms.

As shown in claim 9, the cover can include an integrated storage pouch.

According to claim 10, the cover can be configured for use in residential, commercial, and industrial environments.

As shown in claim 11, the insulation of the thermostat can also be automated and programmed using an insulating cover with additional electrical components.

The invention can, of course, also be self-made, with or without a loop.

Summary

In summary, the present invention provides an efficient and simple solution for reducing heating energy consumption in commercially available radiator thermostats. By applying a thermal insulating cover, the thermostat valve is prevented from opening, especially during ventilation phases in cold seasons. This invention contributes to energy savings without restricting the usage habits of the occupants. The simple handling and the possibility of making the cover from various materials make this solution attractive for a wide range of applications and is a small contribution to saving energy.

Reference List

(1) Thermal insulating cover
(2) Radiator thermostat
(3) Attachment tab / fastening / holder
(4) Radiator

Claims

1. Device for the temporary insulation of radiator thermostats,
characterized by
the fact that the radiator thermostats are provided with a cover made of insulating material.

2. Device for the temporary insulation of radiator thermostats, according to claim 1,
characterized by
the fact that the cover is made of a highly insulating material, such as special plastics (e.g., foam) or natural materials.

3. Device for the temporary insulation of radiator thermostats, according to one of the preceding claims,
characterized by
the fact that the cover is provided with tabs, eyelets, hooks/attachment tabs/fastenings/holders (various materials are possible, such as plastic, natural materials, metal, rubber bands, etc.).

4. Device for the temporary insulation of radiator thermostats, according to one of the preceding claims,
characterized by
the fact that the cover can be tightened like a bag/pouch, has a zipper or snap buttons, or is equipped with a similarly functioning Velcro strap.

5. Device for the temporary insulation of radiator thermostats, according to one of the preceding claims,
characterized by
the fact that a heat storage unit (water, latent heat storage, etc.) is integrated into the cover, a battery that includes a very small electric heater, or has vacuum insulation, and the closure mechanism is constructed to prevent heat loss.

6. Device for the temporary insulation of radiator thermostats, according to one of the preceding claims,
characterized by
the fact that all components and fastening materials are recyclable/reusable.

7. Device for the temporary insulation of radiator thermostats, according to one of the preceding claims,
characterized by
the fact that the cover is adaptable to various sizes and shapes of thermostat valves.

8. Device for the temporary insulation of radiator thermostats, according to one of the preceding claims,
characterized by
the fact that the cover and fastening are water-repellent, UV-resistant, and fire-resistant, have an outer surface designed for visual identification or decoration, and have special properties that prevent the growth of microorganisms.

9. Device for the temporary insulation of radiator thermostats, according to one of the preceding claims,
characterized by
the fact that the cover includes an integrated storage pouch.

10. Device for the temporary insulation of radiator thermostats, according to one of the preceding claims,
characterized by
the fact that the cover is configured for use in residential, commercial, and industrial environments.

11. Device for the temporary insulation of radiator thermostats, according to one of the preceding claims,
characterized by
the fact that the insulation of the thermostat can also be automated and programmed using an insulating cover with additional electrical components.

Fig. 1

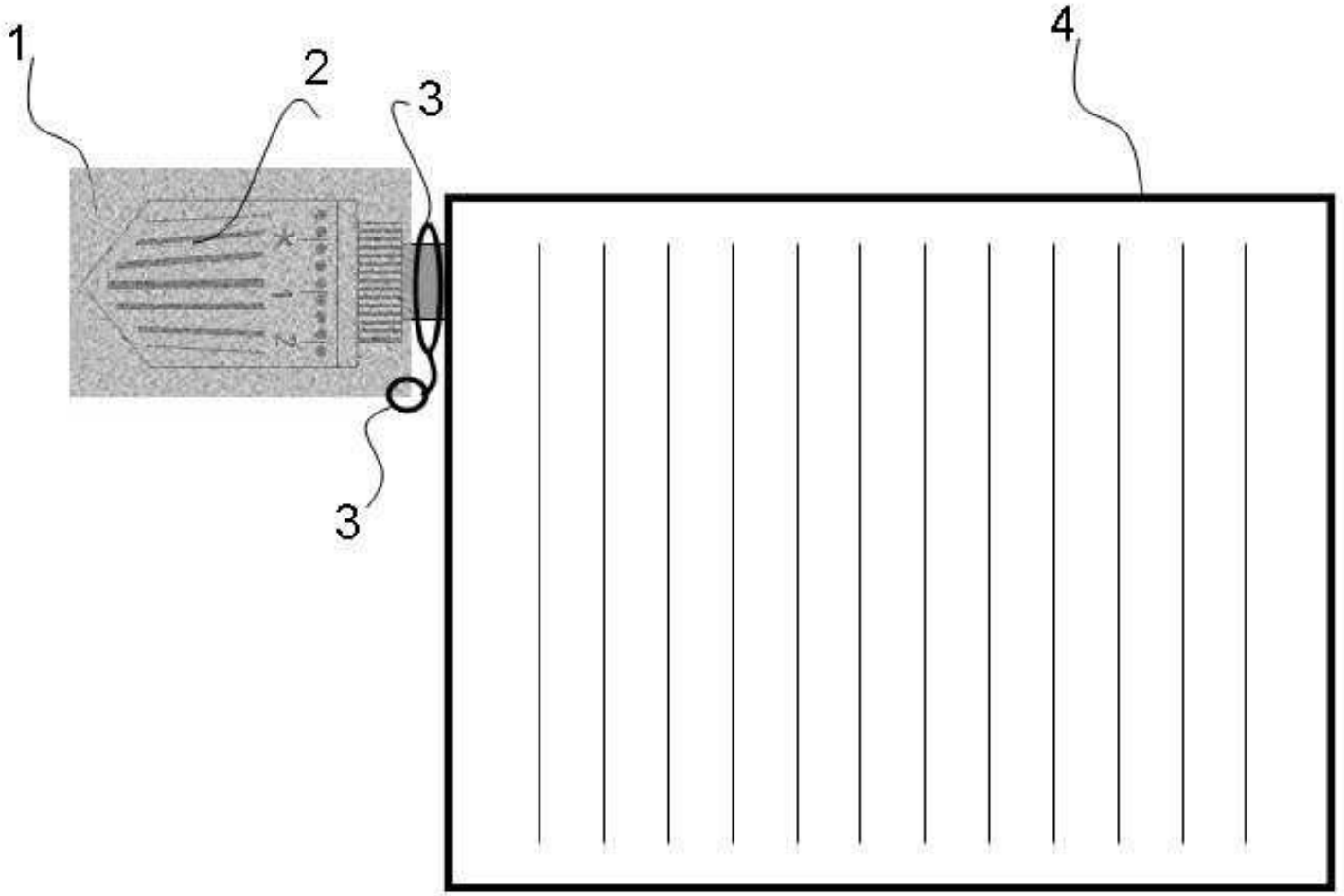

Fig. 2