Nov. 20, 1928. 1,691,967

W. K. GAMMETER

HUMIDIFIER

Filed Dec. 27, 1927 2 Sheets-Sheet 1

Fig. 1.

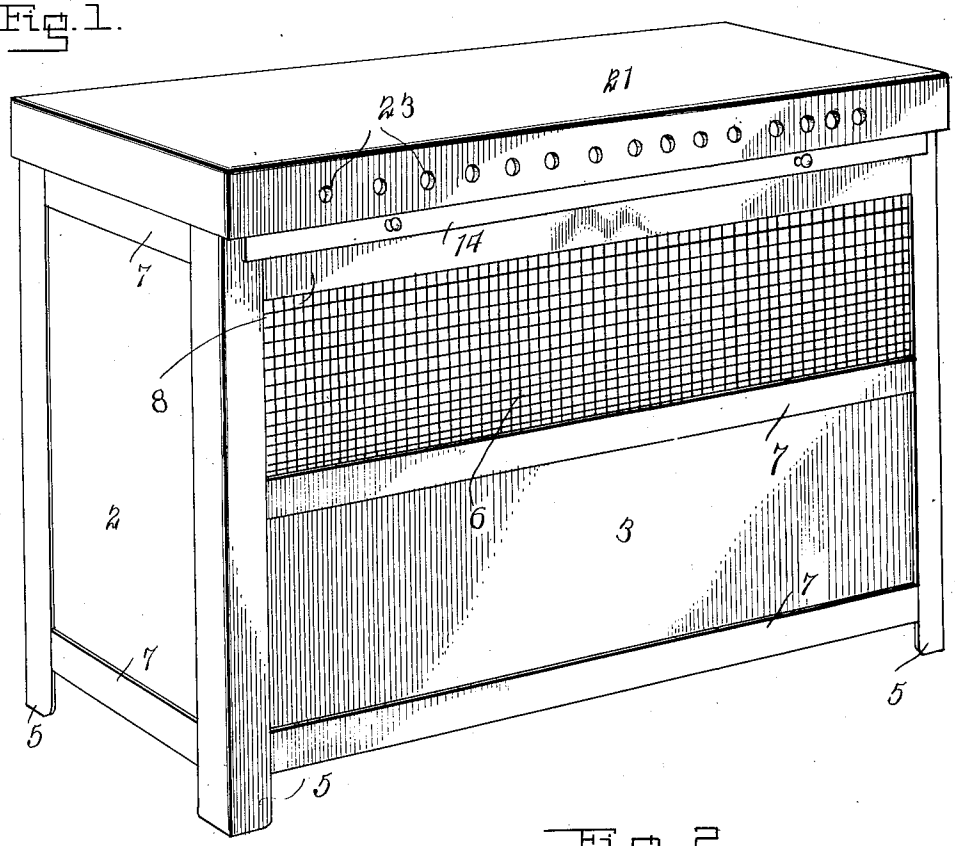
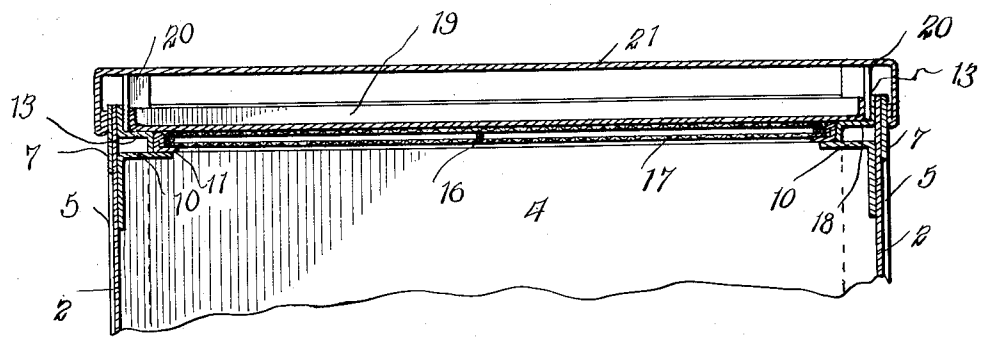


Fig. 2.



Inventor

W. K. Gammeter

By Lacey & Lacey, Attorneys

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Fig. 3.

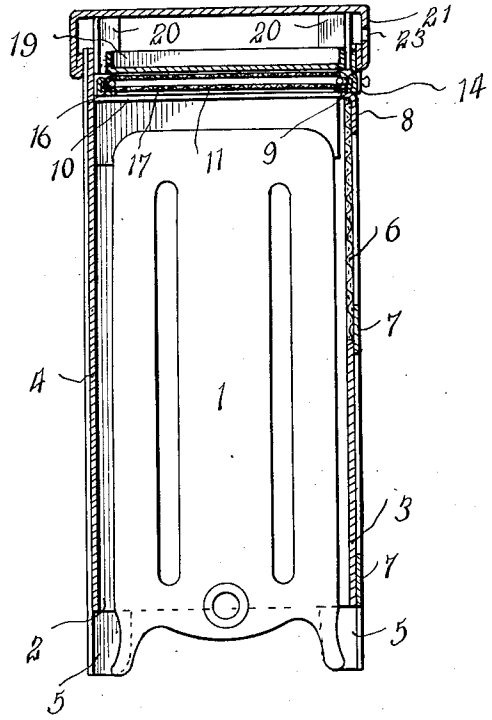


Fig. 4.

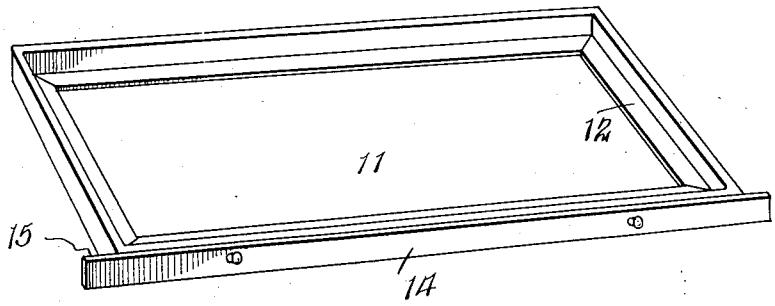
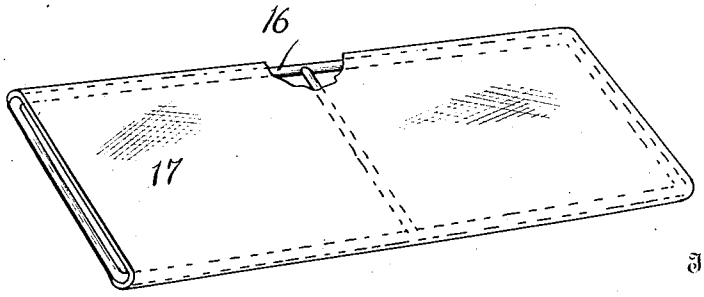


Fig. 5.



Inventor

W. K. Gammeter

By Lacey & Lacey, Attorneys

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UNITED STATES PATENT OFFICE.

WILLIAM K. GAMMETER, OF CADIZ, OHIO.

HUMIDIFIER.

Application filed December 27, 1927. Serial No. 242,911.

This invention has for its object the provision of an attachment for the radiators or registers of house-heating apparatus whereby the radiators may be covered in an attractive manner without interfering with the circulation of the heating air, dust removed from and moisture supplied to the house-heating currents so as to impart a more healthful quality to the circulating air currents and also attain the desired heating of a building with a more economical consumption of fuel than is ordinarily required. The invention is illustrated in the accompanying drawings and will be hereinafter fully set forth.

In the drawings:

Figure 1 is a perspective view of a device embodying my invention;

Fig. 2 is a longitudinal vertical section through the upper portion of the same;

Fig. 3 is a vertical transverse section showing the position of the device when applied to a radiator;

Fig. 4 is a perspective view of an open bottom drawer which forms a part of the device, and

Fig. 5 is a detail perspective view of the dust arrester.

In the drawings, the reference numeral 1 indicates a radiator of a hot water, steam or vapor heating apparatus which may be of any approved form and connected into the circulating system in the usual manner. In carrying out my invention, I provide a housing comprising a back plate 4, end plates 2 and a front plate 3 which are preferably of sheet metal and of such proportions that they may extend around the sides and ends of the radiator in spaced relation thereto, as clearly shown in Fig. 3. These several plates are connected at their end edges by angle brackets 5, the lower ends of which extend below the lower edges of the several plates whereby the brackets serve as legs to support the structure. The front plate 3 does not extend the full height of the legs but terminates at its upper edge at about midway the height of the legs, as shown most clearly in Fig. 1, and above the said front plate is a grille 6 which may be given any ornamental configuration and provides an outlet for the air currents which rise around the radiator and pass therefrom to circulate within the room or building in the usual manner, it being noted, however, that, inasmuch as the attachment provides a housing around the radiator, there are formed, in effect, a plurality of flues whereby the circulation is made more rapid and the air currents rising from the floor of the room are held close to the radiator for an appreciable interval to absorb heat therefrom. Cross strips 7 are provided upon the outer faces of the several plates adjacent the upper and lower edges of the same so as to reinforce the structure and also impart a somewhat ornamental appearance thereto. The grille 6 has its upper edge disposed below the upper ends of the adjacent legs 5 and a reinforcing strip 8 is secured along the upper edge of the grille so as to impart the desired rigidity thereto, and this strip 8 has its upper longitudinal edge extended inwardly, as indicated at 9, to form a supporting flange. On each end wall 2 of the housing is secured a shelf 10 which extends inwardly and is disposed flush with the flange 9, as shown most clearly in Fig. 3. The shelves 10 and the flange 9 provide supports for an open-bottom or skeleton drawer 11 which, as shown most clearly in Fig. 4, consists substantially of a rectangular frame having horizontal webs or flanges 12 projecting inwardly from its sides and ends. To guide this drawer when it is being inserted or removed, angle brackets or cleats 13 are secured to the end walls 2 of the structure and have their inner ends disposed in the form of vertical rails resting on the shelves 10 in spaced relation to the edges of the latter, as shown clearly in Fig. 2. Upon the front wall of the drawer 11 is a face strip 14 which may be equipped with handles of any approved form and the ends of which project beyond the ends of the drawer, as shown at 15 in Fig. 4, this face strip extending across the front of the housing above the reinforcing strip 8 so that the projecting ends of the same may impinge against the respectively adjacent legs 5, as shown in Fig. 1, to limit the inward movement of the drawer. The drawer carries a dust arrester consisting of an open frame 16 of stout wire or light rods conforming in shape and dimensions to the sides and ends of the drawer so that it may fit within the same and rest upon the flanges 12 in frictional engagement with the sides and ends. A bag 17 of textile material is provided to cover the frame 16 and be held in a substantially taut condition thereby so that, when the parts are assembled, this bag will extend over the entire area of the drawer and thereby arrest the rising air currents so

that the particles of dust carried thereby will adhere to the soft textile surface instead of passing with the heated air out into the room.

As shown most clearly in Fig. 2, the guiding brackets 13 are so shaped as to provide intermediate portions 18 which extend horizontally and thereby furnish supports for the ends of a pan 19. The pan has an imperforate bottom and upstanding sides and ends but is open throughout its top so that water placed therein may readily evaporate when the heating plant is in operation, and heat is being given off by the radiator. As shown most clearly in Figs. 2 and 3, short vertically disposed brackets or posts 20 are secured to the housing at the upper corners of the same and rise therefrom above the upper ends of the posts 5, and a cover 21 is supported by these brackets or posts. This cover is preferably of sheet metal and has an outline corresponding to the outline of the housing, the depending rim of the cover fitting closely around the housing and having openings 23 through its front side to facilitate the escape of air.

From the foregoing description, taken in connection with the accompanying drawings, it will be seen that I have provided an exceedingly simple structure whereby a radiator may be readily enclosed and made more sightly in a room. Water is placed in the pan 19 to the capacity of the same and no further attention need be given the apparatus until the dryness of the air within the room indicates that the supply of water has been exhausted. As long as hot air is passing into the room from the radiator, some of the air will travel over the pan and evaporate the water so that the resultant vapor will escape through the openings 23, and this action will serve to economize fuel and better conditions within the room, it being well known that if the air in a room is humid a lower temperature will be comfortable and is more healthful than a higher temperature. It will be noted that there is an open space around the entire lower portion of the radiator and the natural circulation of the air will be from the floor up between the several sections of the radiator and around the same within the housing. This rising air is more or less dust-laden, but as it is not confined around the radiator it rises with some velocity and impinges against the dust-arrester whereby the dust particles will be extracted, inasmuch as they will adhere to the textile bag 17, and the air freed of the dust will be diverted and the greater portion will pass out through the grille. Some air will pass through the textile fabric and this air must pass to the rear of the pan, as the pan is kept close to the front of the casing and the only outlet is between the back of the pan and the back of the housing and then forwardly over the pan. The rising air which does not pass through the grille, cannot pass around the drawer and the dust-arresting bag but must pass through the bag and over the pan to evaporate the water and absorb the water vapor. The moisture-laden air escaping through the openings 23 mingles with the air flowing from the grille so that there is definitely humidified air in the room. When cleaning of the dust arrester is desirable, the drawer may be pulled outwardly without requiring a removal of any of the other parts and the bag may be cleaned by merely striking it against any object or applying a vacuum cleaner thereto. When it is necessary to replenish the supply of water, the cover may be merely lifted from the posts 20 and the pan filled, or the pan may be provided with a small filling nipple passing through the cover. It is to be understood that, while I have shown and particularly described the device as applied to a radiator, the invention may be employed in connection with a hot-air register.

Having thus described the invention, I claim:

1. An apparatus for the purpose set forth comprising a housing adapted to enclose a radiator, a dust arrester slidably mounted in the housing near the top thereof and removable through the front of the same, and a water pan supported in the housing immediately over the dust arrester.

2. An apparatus for the purpose set forth comprising a housing adapted to enclose a radiator, an open bottom drawer slidably fitted in the housing adjacent the top thereof and extending from front to back of the same, a textile dust arrester removably fitted in the drawer and covering the entire area thereof, and a water pan supported in the housing immediately over the dust arrester in spaced relation to the back of the housing.

3. An apparatus for the purpose set forth comprising a housing adapted to enclose a radiator, an open bottom drawer slidably mounted in the housing near the top thereof and extending from front to back of the same, an open frame removably fitted in the drawer, and a textile covering for said frame.

4. An apparatus for the purpose set forth comprising a housing adapted to enclose a radiator, a textile dust arrester removably fitted in the housing adjacent the top thereof, a water pan supported in the housing immediately over the dust arrester in spaced relation to the back of the housing, and a cover extending over and fitting closely to the sides and ends of the housing and in vertically spaced relation to the pan.

5. Apparatus for the purpose set forth comprising a housing, a cross strip extending across the front of the housing, shelves on the ends of the housing flush with the upper edge of said cross strip, an open bottom drawer

slidably resting on the shelves and extending over the cross strip, a dust arrester fitted in the drawer and extending over the bottom of the same, and a water pan supported in the housing immediately over the drawer in spaced relation to the back of the housing.

6. Apparatus for the purpose set forth comprising a housing, a cross strip secured across the front of the housing, shelves on the ends of the housing flush with the cross strip, cleats secured on the ends of the housing above the shelves and having rails at their inner ends resting on the shelves in spaced relation to the edges of the latter, an open bottom drawer slidably resting on the shelves between the rails, a dust arrester fitted in the drawer and extending over the entire bottom thereof, a water pan resting on the cleats and spaced from the back of the housing, and a cover fitting closely about the sides and ends of the housing and extending over the entire top thereof in spaced relation to the pan and provided with vapor escape openings in its front side.

In testimony whereof I affix my signature.

WILLIAM K. GAMMETER. [L. S.]