United States Patent

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[54] **FIREPLACE GRATE SCREEN**
3 Claims, 4 Drawing Figs.

[52] **U.S. Cl.** **126/165**
[51] **Int. Cl.** **F23h 13/02**
[50] **Field of Search** 126/164, 165, 298

[56] **References Cited**

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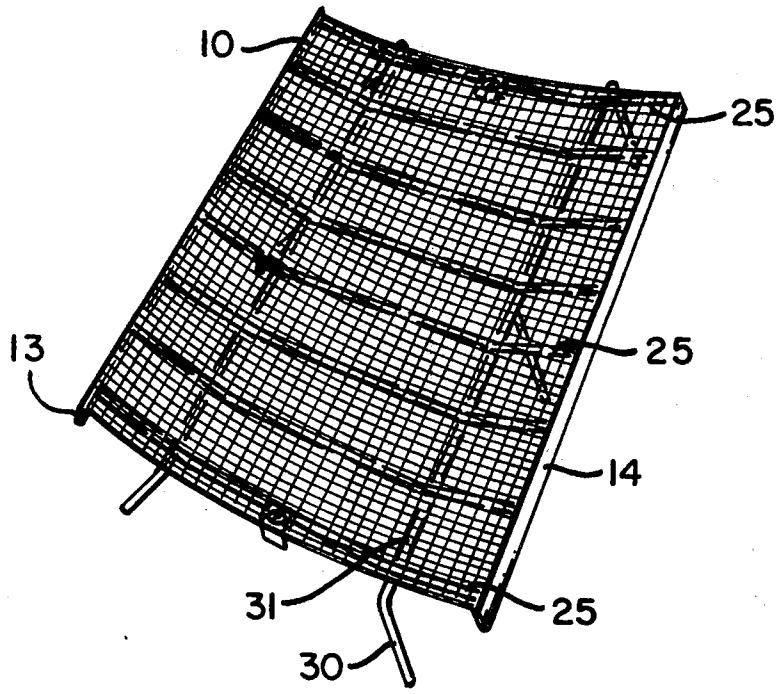
ABSTRACT: A generally rectangular screen adapted to be supported by a fireplace grate in proximity to the upper surface thereof, said screen being arcuately shaped in transverse section and having reinforced, depending flanges extending along its parallel, longitudinal margins, said flanges projecting in the direction of said arcuate curvature.



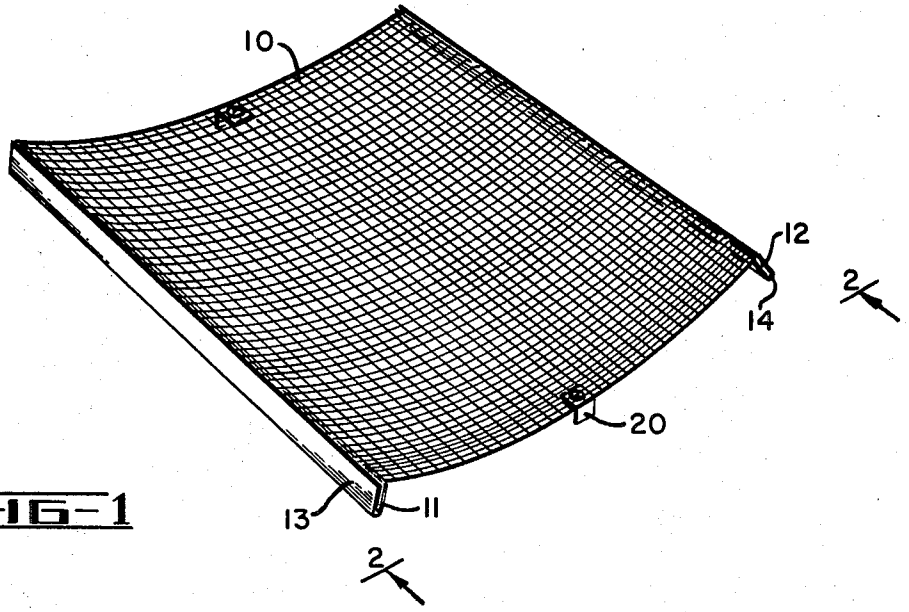


FIG-1

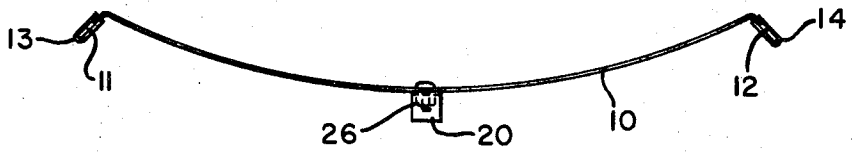


FIG-2

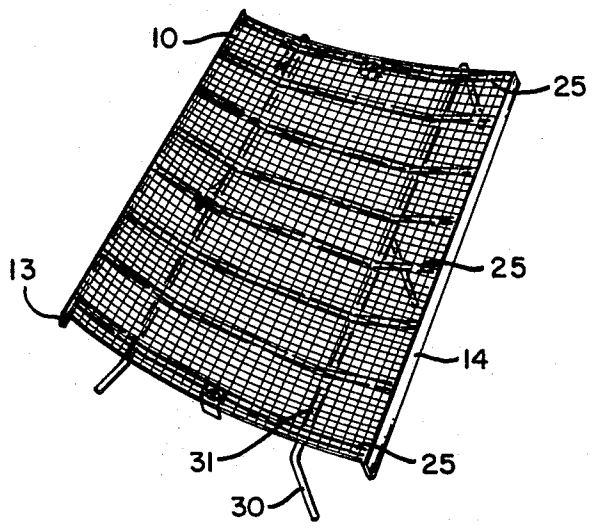


FIG-4

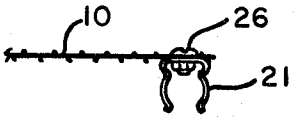


FIG-3

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FIREPLACE GRATE SCREEN

BACKGROUND OF THE INVENTION

It is common practice in many households having a fireplace to use, as the support for the logs to be burned, a grate comprising a series of upwardly U-shaped transverse crosspieces mounted on a frame having depending feet whereby the burning surface is maintained several inches above the floor. Unless the ash body is allowed to build up to the level of said crosspieces, it is difficult to keep the logs burning. Inasmuch as such a body of ashes is unsightly and tends to spill over and blow into the room, it is the conventional practice to keep the fireplace essentially free of ashes when it is not being used. The net result that the practice of building a fire upon the naked grate is a highly inefficient one and requires constant readministration of burning aids of one type or another to maintain a blazing fire.

When the body of ash below the grate has been allowed to build up in close proximity thereto at the time of starting the fire, the condition is soon reached where the grate becomes clogged with ashes and it becomes difficult, if not impossible, for air to make its way uniformly to the under, burning surface of the logs. As a result, the homeowner must intermittently displace the ash body below the grate, a practice which is untidy, at best, and which may have the effect of diminishing the burning rate as the heat body provided by the ash falls to a position well below the grate.

It is a general object of the present invention to overcome the foregoing deficiencies of the fireplace grate without at the same time modifying its structure.

SUMMARY OF THE INVENTION

It has been discovered that a great improvement can be made in the efficiency and general overall utility of fireplace grates of the conventional type, wherein the logs are supported well above the floor by U-shaped transverse elements, or crosspieces, by the use of a screen member shaped to fit in proximity to the upper surfaces of said elements. This screen, which is fabricated of iron wire of relatively heavy gauge, is similar to that employed atop incinerators or chimneys to arrest sparks. The space between the wires is of the order of about ⅛ to ⅜ of an inch, and the wire is fabricated of a standard iron alloy known to resist sagging on being exposed to the temperatures encountered at the grate level in a burning fireplace. The screen is of a generally rectangular configuration and is shaped in an arcuate fashion, as seen in transverse section, whereby it is adapted to fit in general proximity to the upper surfaces of the log-supporting crosspieces of the grate. The portions of the screen adjacent the parallel edges extending in a longitudinal plane are bent at substantially a right angle to the screen and are enclosed within U-shaped, reinforcing edge members, the latter members are clamped into place against the enclosed screen sections to provide depending, reinforced flanges which normally engage the grate in close proximity to the respective ends of the transverse grate elements, or crosspieces. As set in place on the grate, the screen is curved in a downward direction, which is also that in which the peripheral flanged edges project.

If desired, the screen may be provided with depending clamp or other grate engaging means whereby the screen is secured against longitudinal or other displacement when set in place upon the grate.

BRIEF DESCRIPTION OF THE DRAWING

The nature of the present invention will be more clearly understood by reference to the description following when read in conjunction with the accompanying drawing wherein:

FIG. 1 is a view in perspective showing a screen embodying the features of this invention;

FIG. 2 in an enlarged view, taken along the line 2–2 of FIG. 1, showing the end of the screen;

FIG. 3 is another enlarged view of the end of the screen, taken at a right angle to the view of FIG. 2, and showing another embodiment of the invention wherein a U-shaped rather than L-shaped grate engaging member is employed; and

FIG. 4 is a view in perspective showing the upper surface of the screen as set in place upon a fireplace grate.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring more particularly to FIGS. 1 and 2 of the drawings, there is shown a screen portion **10**, downwardly bowed in a generally arcuate fashion in transverse section, as particularly shown in FIG. 2. The parallel marginal portions of the screen extending in a longitudinal direction are downwardly turned, as indicated at **11** and **12**, and enclosed within U-shaped steel clamp members **13** and **14** which press tightly against the enclosed screen portions and give rigidity to the structure.

In the preferred practice of the invention, the screen **10** is provided with centrally disposed, downwardly projecting grate engaging elements, as indicated at **20** in FIGS. **1** and **2**, and at **21** in FIG. **3**, said elements serving to engage the log-supporting grate crosspieces, as indicated at **25** in FIG. **4**, and thus prevent displacement of the screen with reference to the grate. The element **20** takes the form of an L-shaped member secured to the screen by means of the bolt and nut assembly **26**, while in the modification of FIG. **3** the element comprises a U-shaped, spring clamp designed to fit over and snugly engage a grate crossmember **25**. These elements **20** and **21** are detachable and can readily be moved by the user of the screen to any appropriate grate engaging position.

Referring more particularly to FIG. **4**, it will be seen that the screen rests atop a grate assembly comprising legs **30**, longitudinal frame members **31** and U-shaped crosspieces **25** which are upwardly turned at their respective ends so as to prevent the logs from rolling off the grate. The depending flanges **13** and **14** of the screen engage over the ends of the crosspieces **25**, thereby protecting the screen from being displaced in a lateral direction, while the centrally disposed elements **20** or **21** prevent the screen from being displaced in a longitudinal direction.

In other embodiments of the invention not here illustrated, the screen can be made somewhat wider than shown so that the depending flanges **13** and **14** run somewhat outwardly of the ends of the members **25**, thereby providing a larger fire pit than would otherwise be possible. Similarly, the screen may be somewhat narrower than shown, in which event one or both of the flanges **13** and **14** may set upon an upper surface of the crosspieces **25**, thereby raising the screen somewhat above the grate. This may be desirable in some instances so as to provide for better access of air.

In operation, the screen device of the present invention presents several advantages. Thus, the screen openings are of such a size that many of them retain a substantial proportion of the ash resulting from the burning of kindling, papers or the like employed to start the fire. Such ash serves to retain the heat and thereby assists in igniting logs placed atop the fire-starting materials and in keeping said logs burning. At the same time, a goodly proportion of said screen openings will be free of covering ash, thereby permitting air to have ready access to substantially the entire undersurface of the logs. Once the logs are burning, the screen acts to retain an appreciable body of ash; at the same time, many of the finer ash elements fall through to positions below the grate, thereby opening the screen to widespread upward passage of air and providing an ideal log-burning environment.

In those situations where ash is allowed to build up to the grate level and even higher, the screen serves to hold the logs above said ash level, especially in the areas below the upturned screen portions which extend forwardly and rearwardly of the longitudinal axis of the screen. This allows air to have good access to the fire and thus improves the efficiency of the system even when the ash body would otherwise make flame propagation extremely difficult.

I claim:

1. A screen of generally rectangular configuration adapted to be supported by a fireplace grate in proximity to the upper grate surface, said screen having a space of the order of about ⅛ to ⅜ inch between its wires to permit passage of finer ash particles downwardly therethrough, and having a substantially arcuate shape in transverse section from adjacent one longitudinal margin thereof to the opposite, parallel, longitudinal margin, and being substantially unobstructed at the ends between such margins to allow logs supported in a flat position on the screen to project beyond said ends, said screen also having reinforced depending flanges extending along its parallel, longitudinal margins, said flanges projecting in the direction of said arcuate curvature and being adapted to fit

downwardly over the ends of adjacent, transverse elements of said supporting grate.

2. A screen, as in claim 1, wherein the undersurface of the screen, as positioned on the grate, is provided with one or more depending means adapted to engage the grate and secure the screen against being displaced with reference to the grate, said depending means being detachably mounted to the screen for adjustable movement therealong.

3. A screen, as in claim 2, in combination with a fireplace grate having a longitudinal frame with depending legs, and transverse, upwardly U-shaped, log-supporting members carried by said frame.